

REPORT  
OF  
METROPOLITAN PARK COMMISSION

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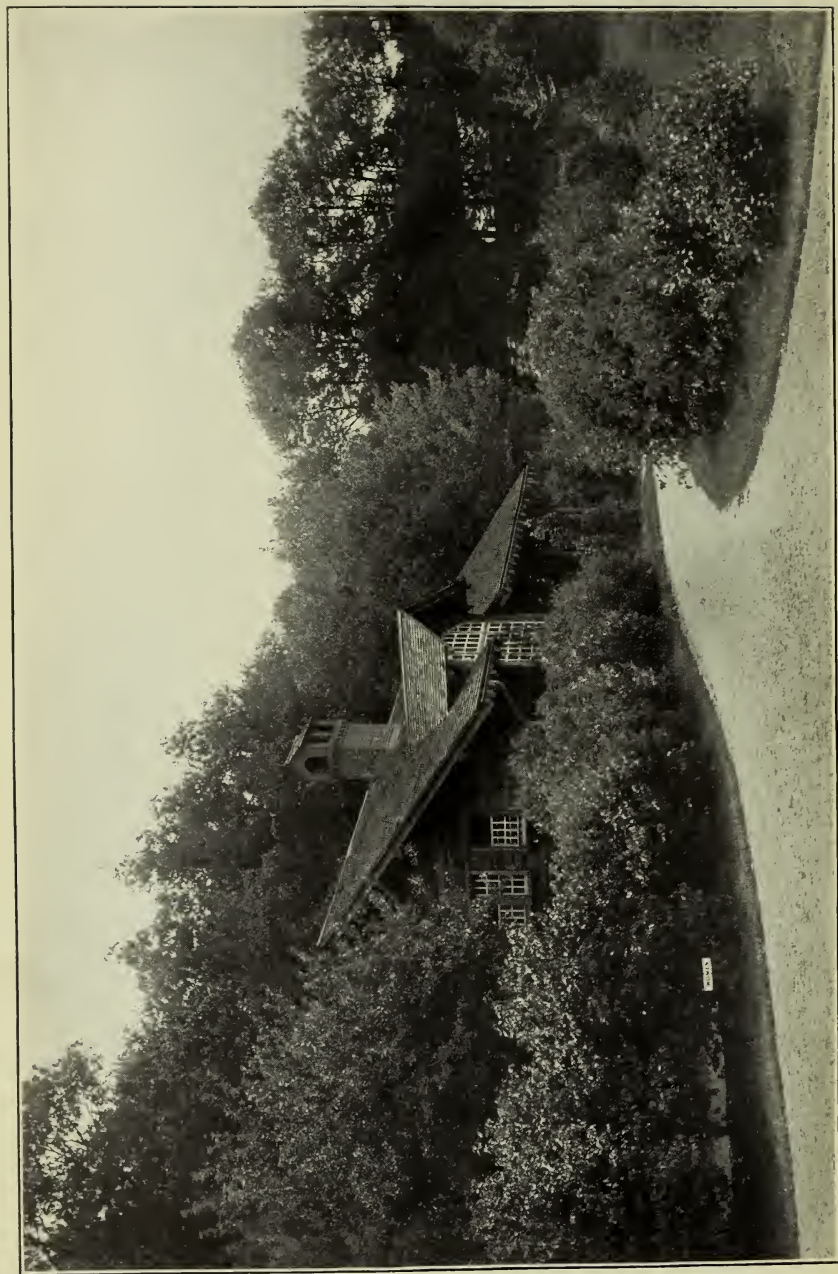








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BLUE HILLS RESERVATION. — Comfort Station, Foot of Great Blue Hill.

# REPORT

OF THE

## BOARD OF METROPOLITAN PARK COMMISSIONERS.

DECEMBER, 1911.



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## OFFICERS.

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### Commissioners.

WILLIAM B. DE LAS CASAS, *Chairman.*

EDWIN U. CURTIS.

DAVID N. SKILLINGS.

ELLERTON P. WHITNEY.

EVERETT C. BENTON.

### Landscape Architects.

#### *Advisory.*

OLMSTED BROTHERS.

### Engineer.

JOHN R. RABLIN.

### Law and Claims.

GEORGE LYMAN ROGERS.

### Secretary.

GEORGE LYMAN ROGERS.

### Assistant Secretary.

WILLIAM H. GOWELL.

OFFICES, 14 Beacon Street, Boston, Mass.





# The Commonwealth of Massachusetts.

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## REPORT.

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The Metropolitan Park Commission presents herewith its nineteenth annual report.

No substantial change has been made in the size and character of the Metropolitan Reservations and Parkways during the past year. The slight changes made in alignment to meet public convenience are described in detail in the Secretary's report.

The total area of the Metropolitan Park System is now 10,214.77 acres. This area includes in wooded reservations, 4,906.43 acres in Blue Hills, 1,898.09 acres, beside Water Board holdings of 1,200 acres, in Middlesex Fells, and 473.62 acres in Stony Brook Woods. The rest of the holdings are small reservations and strips of land along 56.06 miles of river bank, 12.07 miles of seashore, and the land for parkways and highways in the care of the Board. The total cost of this land, independent of development, has been for reservations \$5,894,354.01, and for parkways \$1,750,287.25, a total of \$7,644,641.26. The additional miscellaneous expenses of development, construction of roadways and buildings, and the maintenance and sinking fund expenses from 1893 to 1900, which by legislative enactment were included in the loans, have been, for reservations, \$3,820,342.92, for parkways, \$3,399,676.42, — a total of \$7,220,019.34 making a grand total for land and improvements of \$14,864,660.60.

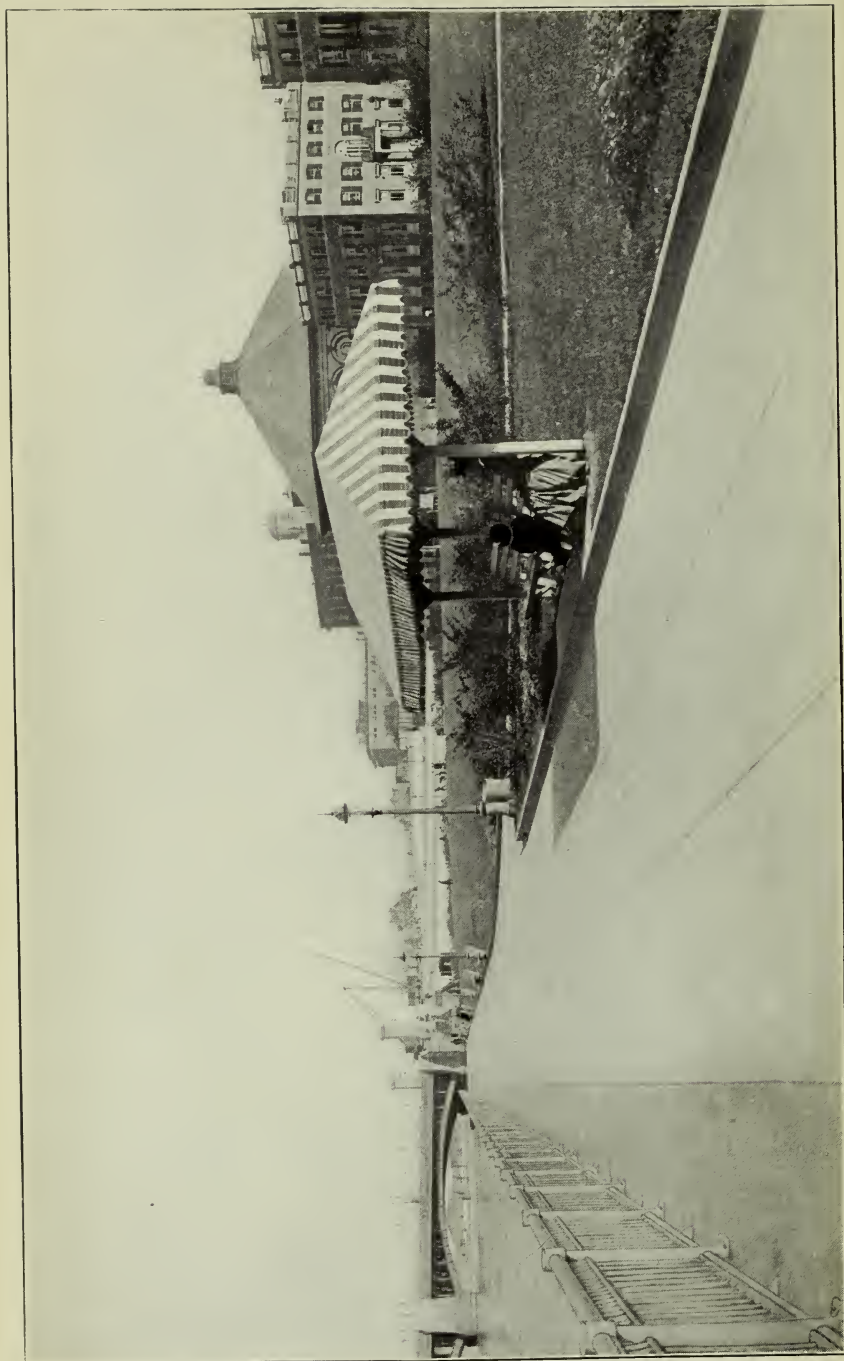
The claims arising out of the acquirement of lands have been so far adjusted that only one claim of moderate amount is now in suit. A few parcels of land have not been paid for, chiefly because no owners who can prove title can be found. A suffi-

cient balance to pay the estimated value of these lands is still unexpended.

The development of the reservations and parkways has proceeded conservatively. Over-development and work in advance of reasonable present necessities have been avoided as far as possible. In some parts of the system development may be said to be completed, in other parts it has not begun. There have been already built, however, chiefly in the woods reservations, many miles of bridle and foot paths, 51.02 miles of carriage roads, and along the seashore and river bank 14.5 miles of completed driveway, and on the parkway lands 32.77 miles of completed road, of which about 7 miles are along river or lake frontages. Some of these parkways are in the form of boulevards with a single driveway, others with two driveways, and others are in the midst of a wider strip of surrounding park land. The Board also has in its care 8.57 miles of town roads within the reservations, making a total of 106.86 miles of roads in addition to the bridle and foot paths to be cared for. The completed roads are lighted by 1,380 lights. Substantial incidental elements in the development are found in 37 bridges, of which 4 are drawbridges, 7 dams, 8 lock gates, 17 sluice gates, 60 tide gates, 21 large concrete culverts, 12.81 miles of sea wall, 50.75 miles of police signal wire, and 208 buildings for administration purposes, comfort stations, sea baths, small refectories, and, at Nantasket, a hotel and other buildings which were upon the reservation when acquired. On Charles River, in the Brighton District of Boston, is a speedway and a children's playground and outdoor gymnasium, and in the Middlesex Fells a small zoological garden, while on Charles River Basin in Boston are many miles of park and permanently constructed walks and other facilities. The details of these are given in the Secretary's and Engineer's reports.

The acquirements and developments thus outlined, though made conservatively, have gradually increased the complexity and cost of maintenance and administration, although the general method and cost of administration has been kept about the same as when the system was small. The Board, with its central office, administers the system at a cost, above engineering,





CHARLES RIVER BASIN. — Boston Embankment, showing Shelter.

of approximately  $5\frac{2}{3}$  per cent., and, including engineering, of  $81\frac{1}{2}$  per cent. of the total maintenance expenses of the system. The reservations and parkways are grouped into 7 divisions, to each of which the various additions are added as made. These divisions have local administration and police headquarters, and are at present in the charge of 6 superintendents, so that the cost of local supervision has also very slightly increased as the system has grown. Aside from these reasonable expenses of administration, the maintenance expenses, consisting almost entirely of the cost of police, lights, labor and supplies, have increased from year to year merely as the extent of the system has increased. The expenses for police and lights are practically fixed charges, increasing merely as the number of each increases to correspond to the increase in the length of roadways, and increased to a slight extent by legislative provision for increase of pay, days off, and pensions. The expenses for labor and supplies, though variable, are determined by the amount of work necessary to keep the roads and buildings in order and to protect the trees against insect pests. When figured in relation to the work to be cared for they have really decreased, because the Legislature has required increases in the prices paid for labor and, as everybody is aware, the cost of supplies has been increasing gradually for several years.

None of these expenses can be materially reduced except by closing to public use some portions of the system, or by withholding some part of the protection and assistance now given to the public. The policing now provided is carefully limited to the real necessities of this branch of the work; incidentally it helps in the police protection of the surrounding cities and towns of the District, and if withdrawn or reduced would occasion them increased expense. For the area covered and complexity of duty performed the force is small. Lighting is proportioned to the number of miles of roadway in actual use. It is now hardly possible to close the park roads to travel or to light them any less efficiently than the near-by town roads are lighted, because many of them have been in use and lighted for several years and have come to be thoroughfares for pleasure travel. A saving in lighting could be achieved only by a reduction in



the number of lights below the point of safety, or in closing at night roadways which are not only a convenience to the general public, but if closed would bring an increased use and cost of maintenance upon the city and town roads which would have to be used if the park roads were closed. The expenses for labor and supplies are conservative when measured by the areas to be cared for, and any great reduction in these expenses would result in deterioration and an increased cost of renewal of work now cared for. Careful attention has been given to the possibility of saving in the cost of maintenance by consolidations and combinations or changes in superintendence, and while the Board does not consider that perfection has been reached in every way, it is satisfied that the present cost of preservation and maintenance is as small and the result as efficient as is likely to be reached by any new method which is likely to be devised.

While striving to be conservative in the acquirement, development and maintenance of the reservations and parkways, the Board has many times been made aware that the Metropolitan Park System has come to play a part in the daily life and habits of the Metropolitan District, and to be looked upon and referred to everywhere as a definite feature of the Metropolitan District. Citizens are quick to notice omissions in constructed work or incompleteness of development and facilities for use, and visitors from abroad take notice not only of the excellencies but also of the limitations and points of incompleteness in the system. The Board is entering upon the twentieth year of its work. Appropriations for acquirement and construction practically ceased in 1908, and no substantial appropriations, except for maintenance, have been since made. It seems right, therefore, that the Board should review the present situation first in regard to the condition of development of the reservations and parkways, for which the land is already wholly or in large part acquired, and second in regard to extensions which are clearly desirable and now reasonably possible. It is especially led to think that this is desirable because, in spite of the large expenditures already made, it has been called upon by the Legislature to make many special reports in regard to

further acquirements or construction or both, and because inquiries are frequently made in regard to desired increases and their relation to the Metropolitan Park System, and as to the reasons for what seem to the inquirers to be matters of incompleteness within the power of the Board to remedy.

Consideration of the matter of further development of the reservations and parkways for which the land is already acquired involves consideration of the adequacy of the present facilities and next of the advisability of extending construction to portions of the system for which land is already acquired.

The Board is aware that present facilities for making use of the reservations and parkways might be increased in many ways, but has been deterred from such increases not only by lack of funds but from a feeling that in many cases they would involve expenses out of proportion to the increased usefulness which might result. For example, many more sanitary buildings, shelter buildings, and small refectories and comfort stations might be found occasionally convenient. Several small bath-houses on fresh and salt water might be provided, and for a short time in each year have considerable use by a small number of people at least. Carriage service might be provided for transportation through the large reservations. Ball fields, outdoor gymnasias, swimming pools, dancing pavilions, boat liveries and motor boat excursions might be provided, and without exercising unreasonable ingenuity the list of possibilities might be very large and correspondingly expensive of realization. Most of these have been considered and deemed inadvisable at present because of expense out of relation to any present hope of adequate return, or because they seemed to fall outside the rule of the Board to confine its work as largely as possible to caring for and developing the reservations and parkways from a metropolitan rather than a local point of view, and of discharging metropolitan rather than what have generally been considered municipal responsibilities.

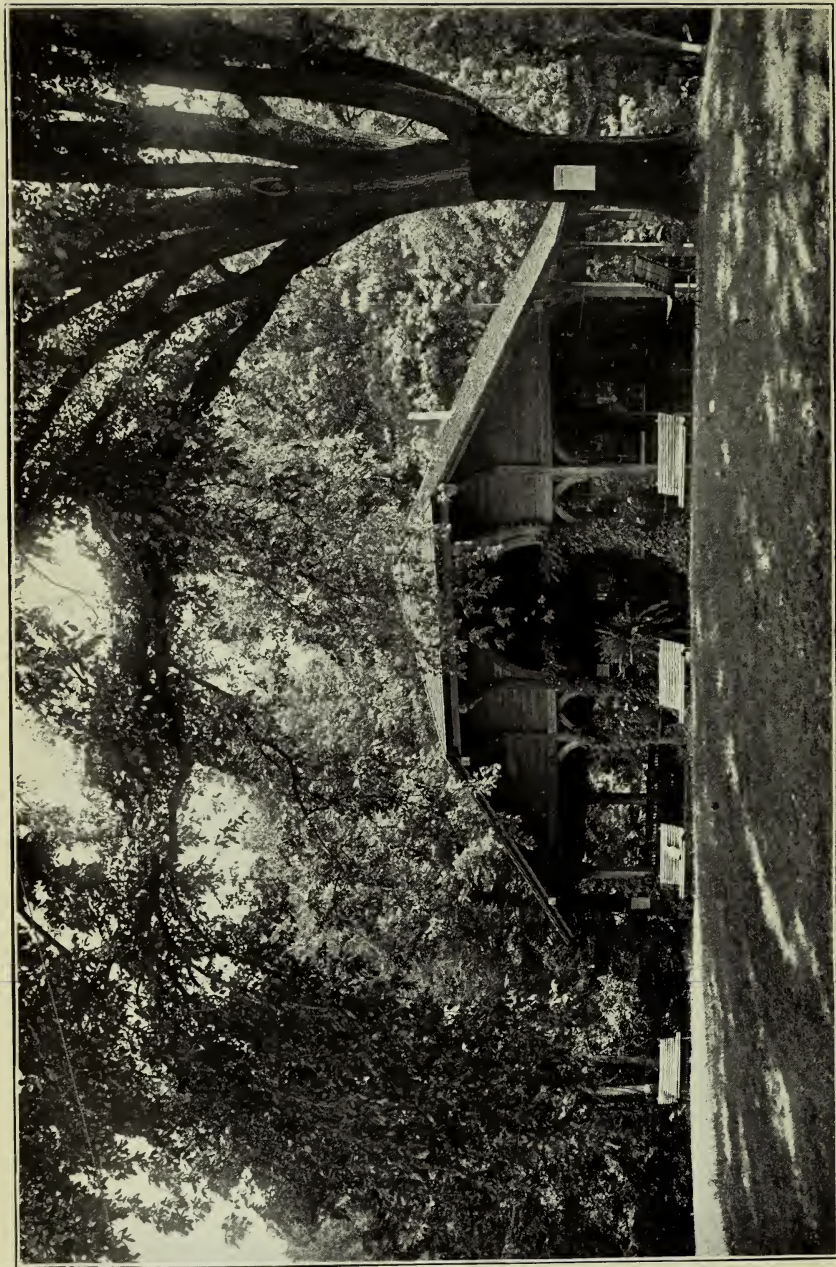
In pursuance of this policy and within the limits necessarily prescribed by funds, lands have been acquired as far as possible with a view to a complete system of metropolitan reservations, and the administration buildings, driveways, walks and paths,

sea walls, dams, locks and other structures have been constructed which have seemed necessary to preserve and facilitate the administration and care of these lands for use by the entire District. To a limited extent buildings and facilities for rest and recreation have been provided. The Commission has been at work for nineteen years, but this period of time is short when considered in relation to the great areas acquired and the amount of development possible within reservations and parkways as widely separated and diverse in character as those of the Metropolitan Park System. Of necessity the development thus far accomplished has been chiefly that necessary for preservation and administration. The public has hardly begun to form habits of using the reservations, and, except at a few points, facilities for recreation have hardly begun to be required in permanent form.

Within the woods reservations the development, though slight in comparison with the infinite possibilities, has been quite as great as public use warrants. It has been confined chiefly to administration buildings to replace in permanent form the old buildings which were temporarily used, and driveways and paths, and relatively inexpensive construction sufficient to serve administration needs and for fire guards and to make most of the reservations reasonably available for those walking or using horses or bicycles and to preserve and replenish the tree and shrub growth. A few sanitary buildings, refectories, shelters, observation towers, seats and picnic facilities have been provided. To some extent facilities for skating, boating and swimming have been furnished. The reservations are adequately policed, and a police signal system connects all parts with administration headquarters. Development of the river-bank reservations has proceeded upon much the same lines, although more completed driveway and permanent bridges, dams, locks and other structures have been built, and in the portion of Charles River known as the Basin development as far as carried has been of permanent design and construction, and except for a few details is complete. Development of the shore reservations has been generally of a permanent and complete character. Development of the parkways and boulevards wherever undertaken has been complete except for incidental







BLUE HILLS RESERVATION. — Refectory, Foot of Great Blue Hill.

features of planting and improving surrounding lands, and in a few instances the construction of additional roadways which has been omitted until necessity requires their construction.

In considering the matter of further development and improvement of present facilities, it appears that very little is required in the woods reservations, although the present development, except in the matter of headquarters buildings and in a few other respects, is, on the whole, of a temporary character calculated to provide immediate facilities for administering the reservations and making them available to public use. The extent to which these reservations are used and resulting habits will undoubtedly increase and change by degrees, and will require increased facilities as they show themselves. Such increased facilities, for example, have been provided during the past year in the Blue Hills to facilitate camping by the Newsboys' Association and by the Boy Scouts, and an additional ball field has been laid out, and permission given for the laying out, at the expense of the petitioners, and occasional use of a polo field. The driveways and paths are generally of very light construction and built merely to accommodate riding and driving with horses, foot passengers and bicyclists. They lack the width, alignment and solidity of construction which would fit them for automobile travel. As time goes on it will undoubtedly be advisable to improve some of these roads to fit them for such travel, and as some of the areas are very large it may be even desirable to provide some additional intersecting highways for all classes of travel. In Middlesex Fells there is immediate need of an adequate shelter, refectory and toilet rooms at the point overlooking Spot Pond, where the recently built electric car lines exchange passengers at the end of the 5-cent fare to and from Boston and other parts of the District. Temporary provision has been made for these needs, but is outgrown. Seats and tables have been provided in the woods nearby and ball fields and recreation grounds have been laid out in simple form within easy reach and can be improved from year to year without special appropriation.

On the river reservations greater development is becoming necessary. On the upper Charles the channels have become obstructed by shoaling, which also produces unsanitary condi-

tions, and the banks are being cut into by the wash from motor boats. Dredging is needed to remove these obstructions and unsanitary conditions and to protect the banks. Below the dam at Watertown the narrow channel which was dredged by the Charles River Basin Commission left the water on each side of and outside the channel very shallow. Already this channel is proving inadequate, and although this Board has marked it and provided a public landing place at Watertown, and flagged suitable anchorage grounds, navigation at this part of the river is attended with considerable risk. The Board desires to widen the channel and use the material taken from it for improvement of the banks, which at many points are unsightly and inaccessible. Larger development of this portion of the river may be made by continuing the improvement of the banks and connecting the driveways already provided by one on the northerly side from Gerry's Landing to the Arsenal Road, and from the Arsenal Road to the driveway to Watertown, and on the southerly side from Nonantum Street in Newton to Brook Street near Faneuil Station, and from Soldiers' Field down stream, and by the improvement of the river bank and landing places and construction of a bridge at Gerry's Landing. These will all be ultimately required, and will add very much to public convenience. On the Lower Basin many details remain to be carried out, which are part of the work which is postponed by more important construction work, and by uncertainty as to whether a subway was to be extended through the Embankment. As soon as it was decided not to build the subway in the Embankment the Board proceeded to provide permanent granolithic walks, landing stages, seats, a few shelters and one large comfort station. Frequent band concerts have been given from a temporary band stand, and the Board has allowed and assisted in the use of the reservation for summer and winter sports and carnivals so called. Shrubs have been planted and trees will be set out during the coming spring. Administration headquarters, police signal system and permanent paving of the highway over the bridge are provided for in funds already available. Considering the length of time since construction began, the development of the Lower Basin and the



extent to which it has come to be used by the public is remarkable. This very use, however, makes it evident that in the near future the whole matter of more complete provision for public sports and opportunities for gathering about and enjoying the Basin will require careful consideration and some considerable expenditures.

Along Mystic River from Mystic Lakes and the Mystic Valley Parkway to Fellsway and Revere Beach Parkway near Wellington Bridge substantially the entire frontage was acquired in 1899, under a joint understanding between this Board and the Park Board of the city of Medford, and in accordance with a plan which provided for a continuous development and driveway to connect the parkways of the northerly half of the District. In accordance with this understanding the portion of the river above Cradock Bridge has been acquired and developed by this Board by the construction of a driveway and bridges and of a dam and lock at Cradock Bridge which maintains a permanent water level in the upper river at a grade lower than the banks of the river and the high tides below the dam. Medford carried out its part of the agreement fully by the acquirement in 1899 of substantially all the banks of the river below Cradock Bridge, at an expense of over \$70,000, which, with interest charges and expenses to date, is understood to now amount to approximately \$125,000. At the time the acquirements were made it was further contemplated that this Board should proceed with its work as promptly as possible on the upper river, and should take a transfer of the lands acquired by Medford and construct a driveway to connect the upper river and parkways beyond with Fellsway and Revere Beach Parkway as soon as the Legislature would provide the money. Delays occasioned by the development of plans for Alewife Brook acquirements and sanitation necessarily made the work of this Board slow, and postponed the time when appropriations could be asked for continuing the driveway down the river across the Medford lands. This delay, although generally recognized as necessary, has naturally given rise to a very strong feeling in Medford that its liberality is not appreciated and that it has now a very strong right to ask that the

Legislature should at once provide for the development contemplated, and this feeling is intensified by a strong resentment in the eastern part of the city of the incidental delay in the building up of this part of the city, which has been waiting for this improvement. Moreover, the largely increased travel, especially by automobiles, which now uses the Mystic River Driveway to Cradock Bridge, congests the rather narrow main street leading to Medford Square, which, even before the construction of the driveways, was overcrowded with traffic and electric cars from Boston to Medford, and to Winchester and Woburn beyond. The immediate extension of this driveway seems to be a fair recognition of the liberality of the city of Medford, and will surely be a very great convenience to public travel, as it would at once become one of the most used and useful parkways of the District. Above Mystic River its tributary, Alewife Brook, and surrounding meadows, which were lower than high tide, have been changed from a most unsanitary condition to one of reasonable wholesomeness by the construction of the dam at Cradock Bridge, and by dredging and incidental construction done by this Board, but paid for by the cities of Cambridge and Somerville and the towns of Arlington and Belmont. The land for this improvement was acquired by this Board upon lines which make a parkway feasible to connect the driveways of Mystic River and Mystic Lakes with the roads leading to the westerly part of the District, and with the driveways about Fresh Pond in Cambridge, which are already connected with a parkway to Charles River at Gerry's Landing. It will be advisable to construct the Alewife Brook Driveway within the next few years.

The seashore reservations already acquired are practically developed. The only immediate needs at these reservations are for increased bathing facilities at Revere and Nantasket, and for improved stable and yards at both, and at Nantasket for a powerful fire pump and the reconstruction of County Road. These needs are pressing and warrant more than passing mention.

For a short time during the early part of the summer of 1911 extremely hot weather prevailed. During this period the bath-houses at Revere and Nantasket did not provide for all who

wished to use them, and a great amount of adverse public comment resulted. Fearing a recurrence of this heated period, the Board provided temporary accommodations for men and boys, bringing their own suits, in a tent at Revere, and under the board walk of the bath-house at Nantasket, at the nominal charge of 5 cents. Those who made use of the temporary accommodations, however, were so few that receipts did not equal cost of maintenance, or indicate a strong desire for low-priced accommodations. It is needless to add that the accommodations furnished were neat and convenient and that the attendants were courteous and painstaking. Since the close of the season the Board has prepared plans and estimates in preliminary form to provide increased accommodations of approximately 2,500 lockers for men, and of 376 rooms for women, estimated to give an increased daily capacity of 10,000 more men and 1,500 more women, and at Nantasket for 300 lockers for men, and 150 rooms for women. Legislation has been asked to provide appropriations for these increases. It is but fair to say, however, that a careful analysis of the conditions of last summer indicates that at Revere the failure of the bath-house to accommodate all who desired to use it was chiefly on the Fourth of July, and was due largely to the fact that many bathers, having secured rooms, remained out for more than two hours each, and that present accommodations would have been sufficient except for a short period in each day if the bathers had retained rooms for reasonable periods only. The Board has carefully considered this phase of the matter and has made investigation of experience at many other places, and finds that the general opinion is that there is no remedy for this even by a system of charges for overtime, unless a law is passed making the retention of a room for a longer period than that for which it is let a misdemeanor for which there may be arrest and fine imposed. The Board naturally hesitates, however, to suggest such a law, although apparently it may become necessary to do so if conditions of the past summer are repeated.

At Nantasket increased accommodations are desirable to provide for merely normal use of the bath-house. There is very little trouble at this reservation from those who retain rooms

beyond a reasonable time. Increased fire protection ought to be provided at the reservation. When this reservation was acquired there were many buildings in various stages of dilapidation on the land. These served the various purposes of a seashore resort, and were the only ones available for that purpose. The Board retained the ones which were most suitable for public convenience, the large wooden hotel, pavilion and café, and the board walks connecting them, and they have been gradually repaired and adapted to present uses entirely from the rents received. The fire risk, however, of these buildings is very considerable, and this fire risk has been largely increased within the last few years by the building of Paragon Park and many other wooden buildings on the opposite side of the street. As part of the improvement in the reservation buildings, stand pipes and extra mains have been provided by the Board, and to this provision and the determined work of the reservation forces is due the saving of these buildings from a fire which broke out in Paragon Park in November last. In view of the possibility of an even greater fire during the summer season when great crowds might be in the buildings, it seems advisable that a powerful fire pump, with salt water as well as fresh water connections, should be installed and made always available for more powerful service than can be relied upon at all times from the present pressure service furnished by hydrants of the local water system. This reservation has been, on the whole, provided for more meagerly than any other one of the largely used reservations. In 1900 the Legislature placed County Road, the main highway from Hingham and Cohasset to Hull, in the care of this Board without any provision for rebuilding, and with the specific provision that the Board might not alter the pole and other public utility rights of the town of Hull, or of the Street Railway Company, nor otherwise interfere with it as a highway to Hull. No funds have been provided for more than the ordinary maintenance of the road in its present condition. The roadway is narrow and curves at uneven grades from side to side. At many places it has no sidewalk; at others the tracks, poles and wires are upon the sidewalk location. It is inadequate in summer, and



at all times disgracefully unlike Metropolitan Park roads generally. The Board desires to widen the entire road location, relocate poles and tracks, and rebuild the road with adequate drainage, sidewalks and curbing. A bill to this effect was presented some years since, but failed of passage, and will be presented again to the Legislature of 1912.

In addition to the above matters of development there are certain parkways, for which the land is already acquired, which may be extended with very great convenience to the public. Construction of Furnace Brook Parkway in Quincy, particularly between Hancock Street and Quincy Shore Reservation, is much needed to provide a reasonable means of approach to the Quincy Shore Reservation. The usefulness of Blue Hills Parkway as an approach to Blue Hills Reservation would be greatly increased by an improvement of the woods roads leading to Hillside Street, so that they may be used by automobiles. Certain border roads in Middlesex Fells ought to be put in condition for use by automobiles, and the easterly driveway of Fellsway East for a short distance along the westerly side of Fellsmere Park ought to be completed. Portions of the highway known as Forest Street, which is the chief line of automobile travel through the Fells to the northerly part of the District, needs immediate reconstruction, both for the convenience of large travel which it must provide for, and because its maintenance in the form in which it was constructed many years before it came to the care of this Board will be excessive until it is reconstructed.

Certain extensions of the Metropolitan Park System by new acquirements and construction, especially for parkways, are very apparent to one familiar with the District, and are very constantly called for by the public. In considering these a clear understanding, first of the principles upon which these acquirements have thus far been made, and secondly the relation which suggested and possible suggestions bear to these fundamental principles, is necessary.

The very broad language of the act under which preliminary report was made in 1892 as to the advisability of establishing a Metropolitan Park System, and the almost equally broad lan-

guage of the acts under which the establishment of the system was authorized, would seem to justify any additions and extensions within the Parks District which include attractive scenery or give convenient opportunities for rest and recreation. While the language of the acts is broad, its application is limited by the amount of appropriations, and in practice has always been expressly limited to specific propositions carefully considered and reported upon, or otherwise proved to be a proper part of a Metropolitan System. In the reports and statements of the Board and its advisers regarding the establishing and extension of the Park System, there have been developed also certain principles of procedure found advisable to ensure the acquiring and developing of a Metropolitan System rather than a system of detached or merely local parks and parkways. These fundamental principles are, in brief, that acquirement and development of Metropolitan Reservations or parks should comprise the most important elements of the scenery and natural recreation grounds of the District, and that parkways should unite and make these reservations available and further useful as parkway connections between the more important population centers of the District. These characteristic features and opportunities of the District are great areas of rugged woodland, the seashore and rivers and great ponds. The principles of procedure adopted by the Board were in brief the acquirement, first of the most desirable wooded reservations, and next of such portions of the river bank and seashore as might be possible within reasonable limits of expenditure, and, last of all, the shores of the great ponds and of occasional small bits of extraordinary scenery, and that in case of all acquirements development and improvement should be reasonably limited by necessities, and should proceed only as rapidly as was reasonably consistent with the financial ability of the District. The interest of the District in the establishment and development of this system, and the result which has been achieved, is one which has surprised other communities, and it may be frankly said has proceeded more rapidly than those who urged the beginning of the work dared to hope for. In its wonderful diversity and completeness, and in its consistency as a great

and diversified system, it is probably unmatched by the park system of any other great city in the world. Its very approach to completeness is tantalizing, and leads the public everywhere to wish for the few extensions which will make it yet more complete. A brief review of the acquirements already made is necessary to a proper understanding of the value of suggested increases.

The first acquirements made by the Board were the woods reservations, Blue Hills, Middlesex Fells, Stony Brook Woods, and a few small ones aggregating over 9,000 acres, which in addition to the 2,000 acres of Lynn Woods, a park of the city of Lynn, and the great park system of the city of Boston, at once provided the District with a series of reservations so placed as to give reasonable opportunities of use to all parts of the District. There has been practically no suggestion of the further acquirements of this class. Almost at the same time beach and river bank and parkway acquirements began. The banks of Charles River not already in public ownership were acquired from Cottage Farm Bridge to Watertown, with the exception of the frontage of a few large business concerns or properties. This was first acquired because it was in the very center of the Metropolitan District, and was largely unoccupied, or occupied by very unsightly and unsanitary buildings. In itself it was complete, but public interest, aroused by the promised improvement, urged and secured authority for continuing the acquirements, until they now include or protect practically all the banks of the river from the new dam replacing Craigie Bridge to a point just above the dam at Newton Upper Falls, a distance of 19 miles. Obviously these holdings ought to be extended to Dedham and the towns beyond which are within the Metropolitan District, which is a comparatively small matter now that the protection of the river has extended so far. The banks of Mystic River are in public control except for a short distance at a few points and no additions are suggested at the present time. On Neponset River acquirements are less continuous, but include most of the bank not occupied by important business buildings, though unfortunately it has been impossible to make acquirements of sufficient

width to provide for driveways along banks which if so opened up would add greatly to the beauty of the District, and provide a very convenient parkway across its southern part. In years to come it is likely to be suggested that protective taking be made along the Saugus and Weymouth rivers, which are the only other rivers of the District.

Revere Beach was acquired about the same time that river bank acquirements began. This beach was chosen for acquirement because it was the one most likely to be of popular benefit. Experience has proved the wisdom of the judgment which dictated its acquirement, and the District would be rich in seashore if it had no other reservation. But public interest once aroused urged and secured the acquirement of shore frontage at Winthrop, Lynn, Nahant, Quincy and Hull (Nantasket), a total of 12.7 miles. Driveways exist or have been built along these frontages in a substantial manner except at Nantasket. At Lynn and Winthrop and a few other exposed points protecting sea walls have been built. The attractiveness and usefulness of these reservations, and the improvement and increase of values induced in each near-by community, naturally suggest that extension be made at Winthrop with sea wall which will protect a frontage which is being rapidly cut into by the sea, clear the Short Beach of small houses which now shut out public view and use of the beach, — and are coming to present a serious problem of sanitation, — and at the same time provide for a driveway which will practically unite Revere Beach and the parkways leading to it with the portion of Winthrop Shore already acquired and fully developed and so make them more available to the entire District. At Nantasket a considerable measure of the charm of the Reservation is in view of the rocky shore of Atlantic Hill to the southeast. It still remains unoccupied except for a few buildings which sufficiently indicate how unattractive its future may become. Its cost at this time will be small in comparison with its value as an extension of the Reservation.

About the time that the first acquirements of woods, river bank and seashore were begun, the Board was authorized to begin the acquirement and construction of parkways to make

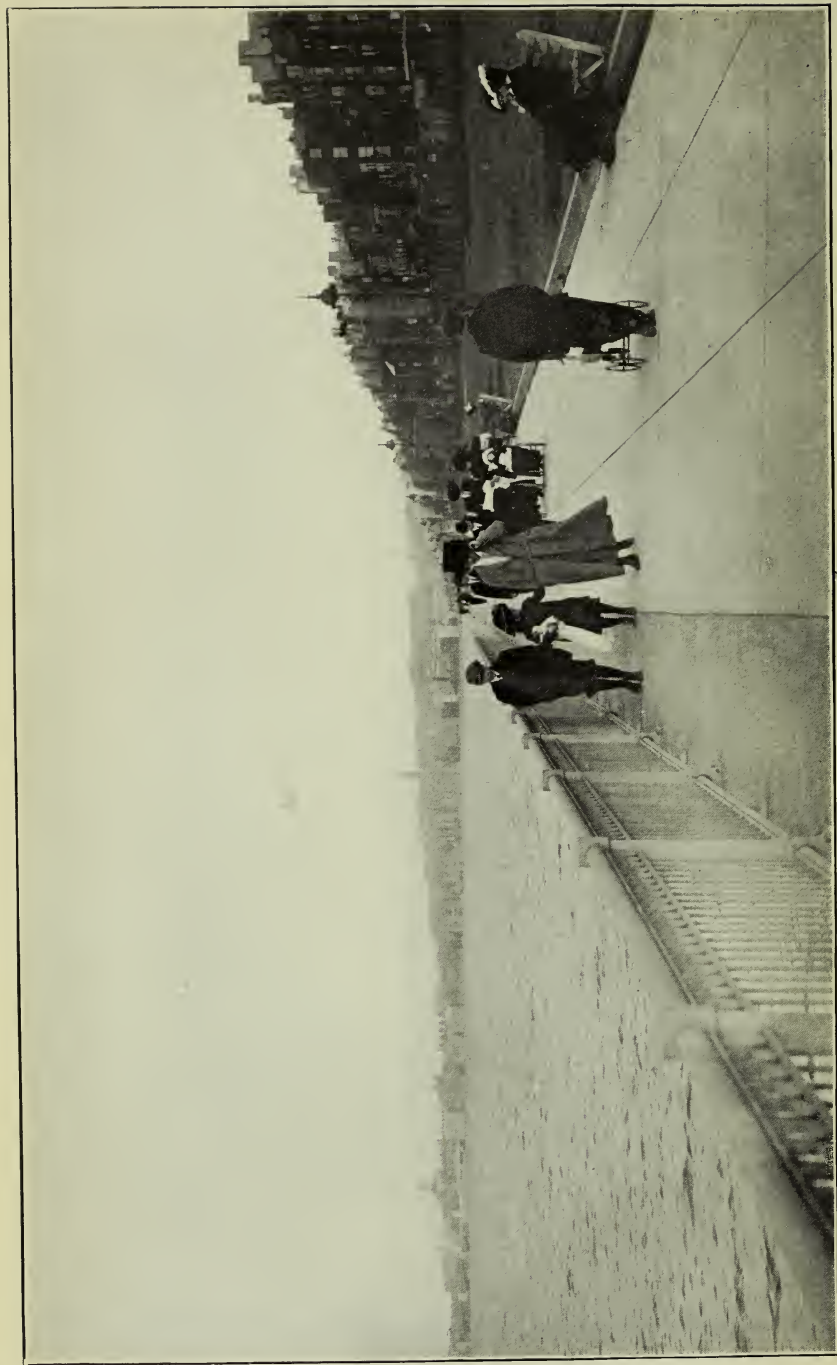


the reservations available and to facilitate pleasure travel between different parts of the District. It was a fortunate beginning because the District was rapidly changing from one in which its population was gathered into detached cities and towns, separated by intervening strips of land with sparse population, to one in which, by the pushing out of buildings to occupy these intervening and hitherto unoccupied lands, reasonable lines of intercommunication were becoming more necessary each year and increasingly more difficult to provide. Nearly 30 miles of parkways have already been provided, which could not now be provided for much more than they have cost. These parkways and boulevards have provided main thoroughfares for the District according to a systematic plan. Now that automobiles have come into such general use it is hard to imagine what the District would do without these arteries of travel, and to the student of such matters, as well as to those who in a practical way feel the incompleteness of the highways of the District, it seems most unfortunate that the acquirement of land at least for certain important uncompleted links in the parkway section, and for certain extensions of the system to the outlying portions of the District, has not already been provided for. Opportunities have already been lost, and the expense of some very desirable extensions must now be greater than if previous opportunities had been availed of. Fortunately, however, it is still possible to provide the land for most of these links and extensions at a reasonable, and in some cases no greater, cost than if they had been authorized in the years that have passed since the system was begun. The most important of these extensions for which land may be secured that is liable to be covered with expensive buildings in the near future, is the Somerville-Cambridge Boulevard, as it is frequently referred to, which would connect the northern half with the southern half of the system by a boulevard between Broadway Park in Somerville and Charles River at Harvard Bridge; and next in importance and necessity for immediate action is the parkway from Columbia Road to Neponset Bridge in the city of Boston, which would connect the Boston parks with the southeasterly parts of the District and open a reasonable and

direct path for pleasure travel, and, if desired, for traffic and electric cars, from the heart of the city to the southerly portion of the District and its Park System and to the south shore. These are great and expensive projects, but their realization will become more and more necessary each year, and is now more possible and less expensive than it will ever be again. Less expensive, but no less advisable, is a proposed parkway from Watertown through Newton and Brookline to West Roxbury Parkway by way of Putterham Woods and Hammond's Pond. In years to come the route suggested will be one of great necessity as a line of travel across the central western portion of the District where population is increasing, and it may now be provided for at relatively small cost in a way which will preserve surrounding land of beauty and comparable only to the superb Mystic Valley Parkway already provided. Extension of land acquirements for Lynn Fells Parkway to connect the Fells and Lynn Woods is still possible and, looking to the future, very desirable. The land will cost more than if acquired a few years ago, but much less than if its acquirement is postponed a few years.

There are also many smaller extensions which have been long talked about but not as yet provided for. These are in the nature of extensions toward outlying cities and towns which will bring these cities and towns into touch with the Park System and the central portion of the District, and soften the feeling, which is quite general in these outer portions of the District, that they have been called upon to contribute largely to the expense of the Park System without compensating advantages, and that the rest of the District having become satisfied with its improvement, is indifferent to other parts of the District to which the benefits have not been extended. The most important of these parkways would run toward Woburn and Wakefield in the northern part of the District, and toward Dedham and Braintree and Weymouth in the southern part of the District. Acquirement of land in Wakefield about Lake Quannapowitt, and perhaps about some other of the great ponds of the District to protect these beautiful sheets of water and connect the highways about them, are also very desirable.





CHARLES RIVER BASIN.—The Boston Embankment on a December Afternoon.



In brief, the Metropolitan Reservations lack so little of what is required to make them as complete in acquirement as present or future needs and opportunities now seem to suggest, that it appears to the Board worth while to add what is necessary to give them such completeness. The Metropolitan Parkways already acquired, when taken in connection with the driveways of the Metropolitan Reservations and of the more important local parks, provide the larger part of a system so complete that, if extended in the ways described in this report, Boston and the Metropolitan District will have a beautiful, convenient, and complete system of intercommunicating pleasure ways such as is not possessed by any other city and its suburbs. Such a system will be justified not merely by the beauty of its drives, but by its usefulness as a road system and the incidental solving of many sanitary and economic problems. The additions necessary to provide for this desirable completeness are few, but so important that it will always be a matter of regret if they are not secured. They may now be secured at less cost than adequate substitutes can ever again be provided.

In 1903 a continuing appropriation for a period of five years enabled the Board to greatly advance the completeness of acquirement and development for the Metropolitan Park System. With this appropriation much has been accomplished for a relatively small expenditure, and the system is now far in advance of what it was in 1903.

No funds are now available for further acquirements or developments except in completion of a small amount of work under a special appropriation for Charles River Basin. While deeming it to be its duty to report at length in regard to the desirability of acquirements and development, the Board does not deem it to be within its province to enter into a discussion of the ability or willingness of the District to further increase its financial obligations except merely to express the hope that the Legislature, upon careful review of the matter, may find that such ability and willingness exist.

There seems to be no necessity for special mention of the many routine matters of maintenance, investigation and report which have occupied the attention of the Board during the past

year. They are in general sufficiently indicated in the reports of the Secretary and Engineer, and in the Appendix. The reservations and the parkways are in excellent condition, and the Board has no special anxiety in regard to them except in the case of Blue Hills, where the contest with the gypsy and brown-tail moths is still somewhat uncertain and may require additional funds in subsequent years; and a new and seemingly hopeless danger is found in the appearance of the chestnut tree blight which has been found uncontrollable wherever in other parts of the country it has appeared. Two matters, however, seem to call for special mention and a request for funds. Both relate to Broad Canal leading out of Charles River Basin, and the adequate discharge of the duty imposed by the act under which the Basin was created. That act requires that Broad Canal be kept dredged at all times to provide a depth of water stated in the act, and that in securing this depth wharf properties be protected by piling. The channel was dredged by the Charles River Basin Commission, but has since filled slightly above the depth to which it was dredged. As the restoration of the channel is a matter of maintenance which will not be required every year, the Board has asked for a special maintenance appropriation to provide for this dredging. Near the entrance of Broad Canal the Charles River Basin Commission also began piling to protect property of the Scully heirs according to the existing harbor lines. After it was begun the city of Cambridge located Commercial Street drawbridge, with approval of the Board of Harbor and Land Commissioners, in such form as to require a wider channel than that for which the piling had been begun. The piling which had already been put in has never been set back nor completed for the entire frontage of the property. The owners of the property claim that the piling must be set back and completed to conform to the new line established by the construction of the bridge. If the Legislature is of the same opinion and wishes this Board to relocate and complete the piling, a sufficient appropriation must be provided as an addition to the Charles River Basin Loan.

The Board has received, and records its appreciation of, a handsome drinking fountain from Mrs. George Hollingsworth,

and her daughter, Miss Rose Hollingsworth, to be located on Blue Hills Parkway where Eliot Street crosses the parkway and to be suitably inscribed as a memorial to Mark Hollingsworth and to his son George Hollingsworth, who was husband of the first and father of the second donor and to record the fact that the land close by was before its acquirement the homestead of those to whose memory the fountain is erected.

All of which is respectfully submitted.

WILLIAM B. DE LAS CASAS.  
EDWIN U. CURTIS.  
DAVID N. SKILLINGS.  
ELLERTON P. WHITNEY.  
EVERETT C. BENTON.

DECEMBER, 1911.

## REPORT OF THE SECRETARY.

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Hon. WILLIAM B. DE LAS CASAS, *Chairman, Metropolitan Park Commission, 14 Beacon Street, Boston.*

SIR:—I submit herewith the report of the Secretary for the year ending Dec. 1, 1911. For convenience this report is subdivided as heretofore under the following headings: 1. Acquisition of lands; 2. Administration; 3. Miscellaneous; 4. Finances.

### 1. ACQUISITION OF LANDS.

Very minor changes have been made the past year in the areas of lands under the control of the Board, the most important change being a taking of about 350 feet in length in Melrose as an extension of Lynn Fells Parkway from Green Street to Bellevue Avenue. A small taking was also made in Watertown from the Perkins Institution and Massachusetts School for the Blind in order to carry out an exchange of lands with the Institution and to establish a mutually satisfactory boundary line between the reservation and land of the Institution. This taking did not involve any land damages. In order to carry out an agreement made in 1905 with the city of Medford for the reconstruction by this Board of the Auburn Street Bridge over Mystic River, this bridge and certain portions of Auburn Street which it was necessary to occupy during construction have been reconveyed to the city of Medford. Two small parcels of land lying respectively between the construction and taking lines of Neponset River Parkway in Milton and of Revere Beach Parkway in Revere have been sold to owners of abutting lands for the purpose of adjusting the boundary lines. The Board has also conveyed a small lot of land in Revere in part settlement for land acquired to provide a better junction of Winthrop Parkway with Revere Beach Reservation.

## 2. ADMINISTRATION.

The administration of business at the general office of the Board is conducted through the agency of the Secretary and Assistant Secretary, the latter also acting as purchasing agent. During the past year the Board has held 53 regular meetings, and has given 64 hearings. One hundred and fifty-four matters requiring special investigation have been referred to and acted upon by committees, and numerous committee hearings have been held. A few of the small number of outstanding claims for land damages have been settled, and there now remain only 52 such claims, for which it is estimated \$26,774.87 will be required in settlement. Only two claims are in suit, and the time has expired within which suit can be brought to enforce settlement of the others. Awards were made a long time ago in the cases of almost all these outstanding claims, but as yet the claimants in most of these cases have not been able to make out a satisfactory title.

The reduction of the engineering force, which has been going on as fast as the public service would permit, has finally enabled the Board, by means of slight alterations in the rooms of the engineering department, and by the purchase of steel plan cases for the more compact filing and storage of plans, to give up the occupancy of two rooms formerly occupied by clerks employed in accounting work. This change will effect a considerable annual saving in the rent of offices.

The method employed in the administration of the work of the general office was very carefully investigated early this year by experts employed by the Governor for the purpose, among whom Mr. Clinton H. Scovell, a certified public accountant, made a particularly thorough investigation of the methods of purchasing and of the system of disbursing money, and accounting for receipts and expenditures. Mr. Scovell's report is on file with the Governor and Council. The work of purchasing is a very important part of the work of this office, since it involves the economical expenditure of quite a percentage of the annual maintenance appropriations. Mr. Scovell's report shows that this work is well done and the methods em-



ployed are, on the whole, businesslike and satisfactory. Under the title of "Purchase Methods" Mr. Scovell says:—

As a part of our examination we enquired into the practice of the Commission in respect to purchases. We found that purchase transactions are originated for the most part by requisition from the reservations. In the Boston office purchase orders are made in triplicate, the original sent to the shipper, the duplicate kept on file in the purchasing agent's office, and the triplicate forwarded to the reservation to be held until the goods are received. When the goods arrive the quantities received are noted on the back of the triplicate copy which is then returned to the Boston office. This practice conforms to good business standard in every respect, except that the triplicate copy forwarded to the reservation shows exactly what quantities are expected, and therefore does not give the same check as to the actual receipt of goods that would be afforded on a copy of the purchase order that was blank in respect to the quantities. Purchase order stationery can be easily arranged so that the receiving clerk's copy does not contain any information as to the quantities ordered. In this respect the practice of the Park Commission is open to improvement.

Purchases which are expected to cost \$25 or more are preceded by formal bids which are taken on forms submitted with uniform specifications to all bidders. The bids are opened by the Commission in public and awards made to the lowest bidder, orders being placed on the purchase order form referred to in the preceding paragraphs.

Invoices are required to be made by the shippers in duplicate on stationery furnished by the Park Commission. When invoices are received both the original and duplicate are sent to the reservation for approval. When they are returned to the Boston office the original is entered on two schedules for the State Auditor and State Treasurer, the first showing the appropriation to which the purchase is chargeable, and the second the addresses as well as the names of persons to whom the checks are to be drawn in payment. This practice in regard to purchase invoices makes an admirable record in the office of the Commission, and presents the material in excellent form for the State Auditor, but it seems to us unnecessary to require the consignor to render the invoices in duplicate without allowing him to use any carbon copy. In fact if invoices are required in duplicate, it seems to us altogether better that the duplicate be a carbon copy, thus making sure that it is an exact reproduction of the original. In our opinion the stationery should also be arranged so that it would not be necessary to make separate lists of approved payments for the Auditor and Treasurer. The records of the purchasing department in regard to quotations, contracts, etc., are up to a satisfactory standard.

Mr. Scovell suggested in his report three comparatively minor changes, and these have been found practicable and have been adopted.

*Engineering Department.*

The details of the work of this department are given in the report of the Engineer which follows later (*post*, page 53). I will, therefore, only call attention to a few of the principal features of engineering work. The work of excavating the new channel of Alewife Brook was suspended Jan. 1, 1911, because the funds provided for this sanitary improvement by chapter 529 of the Acts of 1906 had been exhausted. Subsequently, by chapter 458 of the Acts of 1911, the sum of \$15,000 additional was authorized for the continuance of the work, to be repaid to the Commonwealth by the cities of Cambridge and Somerville and the towns of Arlington and Belmont, as by the earlier act. The work of excavation was begun again about September 1. A contract has also been let for the construction of an iron fence on the retaining walls along the Brook near Broadway and it is expected that all the work on this sanitary improvement will be completed about the last of December. The work of laying granolithic sidewalks in Fellsway East and West under an appropriation made for the purpose in 1910 has been continued, and 2,600 lineal feet have been laid, making altogether about 6,000 lineal feet laid in these two parkways. In all cases the owners of abutting lands have paid one-half the cost. Electric motors for operation of the drawbridges have been installed at Malden and Saugus River bridges. A motor has also been installed at Cradock Bridge, Medford, for operating the lock gates in the dam across Mystic River. The large area of marsh land forming a part of Revere Beach Parkway in Chelsea has been ditched for the purpose of destroying the mosquito which infested the locality. This work was done at the request of officials of the city of Chelsea and in conjunction with similar work of that city on the other side of the creek. Winthrop Parkway has been surfaced and finished and the parkway opened for use. The work of dredging and straightening the channel of Mystic River under chapter 652 of 1908 has been

completed to High Street. The work of rebuilding the Atlantic Street Bridge over the tracks of the Old Colony Railroad, Quincy, is in progress by the New York, New Haven & Hartford Railroad Company. Under authority of chapter 157 of the Resolves of 1911, the Board has entered into an agreement with the railroad company to pay a certain proportion of the additional cost which will result from constructing this bridge large enough to carry the parkway as well as highway traffic. Bids have been invited for filling the approaches to this bridge, as authorized by said resolve. This is a most important piece of work, as the route over this bridge will not only be the direct approach to the southerly end of Quincy Shore Reservation, but to the Squantum aviation field and to the rapidly growing population in the neighborhood of Squantum and Wollaston. A large amount of work has been done on the Charles River Embankment and Dam, directed by or under the supervision of the Engineering Department. This work is described more in detail in the report of the Engineer.

### *Superintendence.*

BLUE HILLS DIVISION: B. J. COSTELLO, *Superintendent.*

All the main roads in *Blue Hills Reservation* have been put in good condition, and the important connecting road along the north border from Forest Street to Hillside Street in Milton has been completed. The new sanitary building at Houghton's Pond has been open this season for use by the public. The necessary moth work has been done and 335,000 white pine seedlings have been set out to take the place of the present inferior tree growth. It is a matter of great regret that the chestnut tree blight has been discovered in the reservation. The only remedy for this disease according to the United States Superintendent of Agriculture, is to immediately cut down and burn the trees affected.

In *Stony Brook Reservation* Turtle Pond Road has been repaired and oiled, and Bold Knob Road resurfaced and oiled. A new border road on the westerly side of the reservation is nearly completed. This road will furnish almost the only means of access to a considerable tract of private land abutting



## Metropolitan Park System—Dec. 1, 1911.

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on the reservation, a part of which is in process of development for building purposes, and all of which will probably be built upon in the near future. The usual moth work has been carried on in this reservation, and 50,000 white pine seedlings have been set out. A new police signal line has been put in, connecting this reservation with headquarters at Blue Hills Reservation.

In *Neponset River Reservation* more moth work was done the past year than for several previous years owing to the badly infested conditions on adjacent private land.

*Neponset River Parkway* was treated with oil.

At *Quincy Shore Reservation* the usual work of cleaning the beach and keeping the driveway in good condition has been done. The roadway from the junction of the parkway with Atlantic Street to the reservation has been oiled and trees have been set out. The new sanitary building at the corner of Bromfield Street was opened for use early in the year.

The driveways of *Blue Hills Parkway* have been oiled, trees cared for by burlapping and spraying, and a granolithic sidewalk has been put in on the easterly side from Eliot Street to Mattapan Bridge.

The driveway of *Furnace Brook Parkway* has been treated with oil, and the usual treatment for moths has been given the trees.

MIDDLESEX FELLS DIVISION: A. N. HABBERLEY, *Superintendent*.

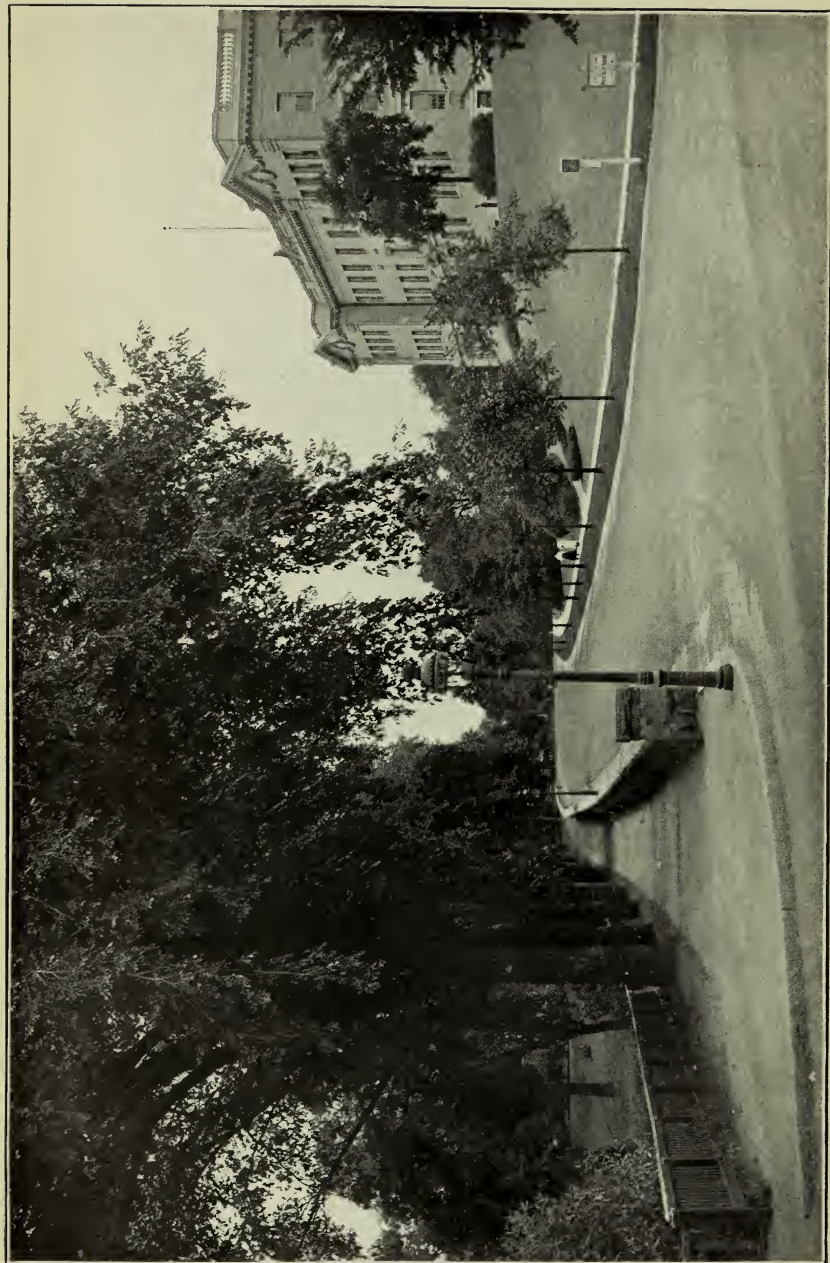
In *Middlesex Fells Reservation* Forest Street from Half Mile Road to Brooks Road has been resurfaced with crushed stone and gravel and treated with liquid asphalt. Main Street from Bear Hill Road to Chandler Road has been resurfaced with gravel and treated with liquid asphalt. Necessary repairs have been made on many of the reservation roads, and the following roads received a new treatment of liquid asphalt: Elm Street and Emerson Street Border Road, their entire lengths; New South Street from Main Street to South Street; South Street from Main Street to Pond Street; Woodland Road from Sanitarium to the Medford line. The following roads were retreated with liquid asphalt: Main Street from South Street to Bear Hill Road; Forest Street from Half Mile Road to Elm

Street; Pond Street, its entire length; and Woodland Road from Pond Street to Sanitarium. A number of animals and fowl have been added to the animal collection at Pond Street headquarters, and a bubble fountain installed at this point for public use. The collection has been visited by large numbers of people. A small stable is being erected at the Pond Street headquarters. The work of suppression of the gypsy and brown-tail moths has been very satisfactory the past year, and is in such a condition at the present time that a somewhat less appropriation than heretofore will be needed for this work the ensuing year. The nursery has been greatly improved during the year and is in excellent condition. A large amount of planting was done in this division with shrubs from the nursery, and 2,244 shrubs were furnished for use in other divisions. Sufficient hay and vegetables were raised for feed of the horses and other animals.

*Middlesex Fells Parkway.* — The easterly roadway of Fells-way West has been resurfaced with stone and gravel and treated with Standard asphalt binder. Fellsway East from Fells Avenue to Middlesex Avenue, and from Pleasant Street to Wicklow Street has been treated with asphalt oil, and from Highland Avenue to the reservation with Standard asphalt binder. The gutters on Fellsway from Mystic Avenue to Emerald Street in the westerly roadway have been dug out and surfaced with stone and treated with tar and asphalt mixture, and about 1,800 feet of gutter have been laid on Fellsway Extension. The easterly roadway of Fellsway from Broadway to Wellington Bridge and the westerly roadway from Mystic Avenue to Wellington Bridge and from Revere Beach Parkway to the Bridge over the Medford Branch of the Boston & Maine Railroad have been retreated with tar and asphalt mixture. Shrubby has been planted on the westerly side of Fellsway from Riverside Avenue to Wellington Bridge and at Fellsmere Park. Tree pits have been prepared for planting permanent trees from Mystic Avenue to Revere Beach Parkway. A bubble fountain has been installed at Fellsmere Park. The usual gypsy moth work has also been carried on in this parkway.

The section of *Mystic Valley Parkway* from Bacon Street to Aberjona Bridge has been resurfaced with macadam and





MYSTIC VALLEY PARKWAY. — Northerly from Main Street, Winchester.



treated with Standard asphalt binder. The section from Main Street to Mystic Avenue and from High Street to the dam has also been retreated with the same material. The section from Highland Avenue to the Reservation has been resurfaced with gravel and treated with liquid asphalt. A granolithic sidewalk has been laid near Bacon Street to connect with a sidewalk laid by the town. The usual creosoting and spraying for gypsy moths and elm-tree beetles and the removing of nests of brown-tail moths has been continued. At Cradock Bridge the total number of boats passing through the lock and over the rollway from Dec. 1, 1910, to Nov. 30, 1911, was as follows:—

<i>Through Lock.</i>				<i>Over Rollway.</i>			
Power-boats,	.	.	3,126	Canoes,	.	.	294
Dories,	.	.	362	Dories,	.	.	82
Rowboats,	.	.	24	Rowboats,	.	.	69
Power-canoes,	.	.	39				
Scows,	.	.	4				
			<hr/>				<hr/>
Totals,	.	.	3,555				445

REVERE BEACH DIVISION: H. W. WEST, *Superintendent.*

The driveway of this reservation has been repaired and treated with tar and asphalt and covered with stone dust. A wooden bulkhead has been constructed from Revere Street to the bath-house shelter. Bubble cups have been placed on all the fountains and several new drinking fountains installed. The bath-house was opened for use on May 30 and June 4, and for the season on June 11, and was closed September 10, having been open for business ninety-four days. The total number of bathers was 175,478, of which number 108,269 were males and 67,209 females. The total receipts were \$37,725.40; and the total expenditures, \$35,440.03. On July 22 the Board opened a tent at Revere Street for the use of those who could not be accommodated at, or did not wish to patronize, the bath-house. In this tent accommodations were provided for caring for the clothing of bathers, and a towel was also furnished each bather. The bathers provided their own bath suits. The price for the use of this tent was 5 cents for each bather. The tent was destroyed during the heavy wind and thunder storm, Au-



gust 18, having been in use nearly twenty-seven days. The total number of bathers during this time was 4,111 and the cash receipts, \$205.55. The expenditures, including the cost of the tent, tent-furnishings, and pay of attendants, were \$1,140.86.

*Winthrop Shore Reservation.* — Some repairs have been made on the sea wall and a retaining wall has been built to strengthen the present wall near land of the United States government. A large amount of débris which was thrown upon the drive by winter storms was removed in the spring, and the drive has been repaired and patched with tar, asphalt and stone dust.

*Winthrop Parkway* is now practically completed, so that it can be opened for travel about the middle of December.

*Revere Beach Parkway.* — The driveway of this parkway has been repaired and retreated with tar and asphalt. The wood paving on the bridge over the Western Branch of the Boston & Maine Railroad in Everett has been relaid in several places.

*Lynnway* has received necessary surface treatment of tar, asphalt and stone dust.

*Lynn Shore Reservation.* — The driveway of this reservation receives a very large amount of automobile travel, and was repaired and treated with tarvia and the surface covered with stone dust early in the spring. Later in the season it was found necessary to retreat the surface from Gladstone Park to Washington Street, owing to the severe wear the drive had received from automobiles. About 350 feet of old iron fence along the sea wall was removed and replaced with galvanized iron fence. Considerable repairs were also made on the sea wall itself from King's Beach Terrace to Atlantic Terrace under the supervision of the Engineering Department.

*Nahant Beach Parkway.* — The drive of this parkway was treated with tar and asphalt from the junction of traffic road to Washington Street. The bridle-path was also covered with cinders and is in good condition. The *Nahant Beach Bathhouse* was opened on July 1 and closed on September 4, a period of sixty-six days. The total number of bathers was 39,377, of whom 20,545 were males and 18,832 females.

There were approximately 7,000 more persons using the bath-house this year than last. The largest attendance on one day was 2,169 on July 9. The receipts for the season were \$8,124.95, and the expenditures \$6,872.93.

CHARLES RIVER DIVISION, RIVERSIDE AND SPEEDWAY SECTIONS: J. L. GILMAN, *Superintendent*.

In *Riverside Division* much work has been done in the destruction of the gypsy and brown-tail moths and the elm-leaf beetle. Another sprayer is needed in this division for this work, which will continue to present a serious problem for some time to come on account of the length of this division and the infested conditions of land adjoining. Norumbega Road was opened to the public, except those using automobiles, early in the year and on June 1 was opened to the use of automobiles. Quinobequin Road was also opened to the use of automobiles in the middle of June. Other roads in this division have been repaired and treated with oil and other surfacing wherever needed. Thirty-one persons were rescued from the river by officers of this division during the year and 176 persons in all received treatment and assistance at the station.

There were thirteen days of sleighing at the *Speedway* during the winter, exactly half the number of days of last year. During the fall, winter and spring the Metropolitan Driving Club, as usual, held races, and on May 19 gave a horse show which was attended by approximately 10,000 people. A half-mile circular track is being built and will be completed for the spring races. Soldiers' Field Road has been resurfaced with gravel and treated with calcium chloride. Charles River Road has been oiled and sanded and a large number of shrubs and some willows planted along that part of the road near Beacon Square, Galen Street and Riverside Street, Watertown. Necessary work has been done to destroy gypsy and brown-tail moths and the elm-leaf beetle. The elm-tree borer has done considerable damage to trees in this section, and trees along Soldiers' Field Road have been treated twice during the summer season. Work in suppression of this tree pest is particularly slow and expensive owing to the time which must be consumed in

going over the trees carefully. Now that the water in the Basin is kept at a constant level there is no longer need for the dike which was originally built to keep out the tide from the Speedway Section, and a portion of this dike has been removed for subgrading of the circular trotting park. The playground at Faneuil has been graded and rolled. During the winter measurements of the thickness of the ice on the river were taken daily and signs put up to warn skaters of dangerous spots.

*Fresh Pond Parkway.* — This parkway has been resurfaced with stone dust and treated with calcium chloride. The gypsy and brown-tail moths and elm-leaf beetle and borer have received the attention necessary.

*Alewife Brook Parkway.* — The principal work done on the lands included in the takings for this parkway has been the destruction of moths.

CHARLES RIVER DIVISION, LOWER BASIN: H. W. WEST, *Superintendent.*

The more important permanent improvements made in this division the past year are described in detail in the report of the Engineer. They consist of the construction of 6 public landings, one near Cambridge, one near Berkeley Street, two at Harvard Bridge, one at Western Avenue and one at Watertown; the excavation and filling of tree pits in the park at the Dam and on the Embankment; the construction of granolithic walks on the park and Dam and on the Embankment; the construction of a building for the storage of stop planks for use in the lower end of the ship-lock; repair and repainting of the ship-lock; and the preparing of beds for, and the planting of, shrubbery. The latter work involved the preparation of the beds for, and the planting of, 5,450 shrubs on the Embankment between Otter Street and Harvard Bridge, the addition of 212 shrubs to the section between Otter Street and Cambridge Bridge, and 628 shrubs in the beds in the park on the Dam. Shrubs will be planted the ensuing spring on the section of the Embankment between Harvard Bridge and Charlesgate East. A public comfort station is also in process of construction on the Embankment between Otter and Berkeley streets. During last winter the ice on the part of the river between Harvard

Bridge and Clarendon Street was kept cleared of snow so as to provide opportunity for skating. The grass plot from the Union Boat Club to Charlesgate West has been covered with a mixture of loam and fertilizer. Fifty-eight settees have been installed along the Embankment and 189 more are being made and will be placed on the Dam and Embankment for use the coming spring. Three experimental canvas-top shelters of somewhat varying types have also been located in this vicinity, and quite a number more of the type which seems most satisfactory will be placed along the walk on the Embankment the coming year. Four gates have been put in the fence along the Embankment wall to facilitate the entrance of skaters upon the ice, and wooden steps for the same purpose were placed at Union Boat Club, Berkeley Street, Clarendon Street and Fairfield Street. Seven additional life boats have been purchased for use during the skating season. Life boats have also been placed on the new boat landings along the Embankment, also one at River Street Bridge and one at the North Harvard Street Bridge. Eight additional 14-foot ladders, 8 additional grappling poles and 16 additional life preservers have been conveniently located between the Dam and the North Harvard Street Bridge. Aid was given to 179 persons who had suffered accident or injury. Seventeen persons were rescued from drowning, and 24 lost children were taken charge of and restored to their homes.

BEAVER BROOK DIVISION: R. ELDER, *Superintendent*.

The general work at this Reservation has been much the same as last year, consisting principally of keeping the walks and paths of the Reservation in order, cutting out underbrush and treating the trees for moths. The Reservation continues to be very popular for picnic parties.

NANTASKET BEACH DIVISION: E. E. BICKFORD, *Superintendent*.

Nantasket Avenue was resurfaced its entire length this year and treated with calcium chloride. A coal pocket has been built at the power-house capable of holding about 65 tons of coal. This will effect a saving in the handling of coal used



at the power-house. A 10-inch water main has been extended along the easterly side of the pavilion and café to a point opposite the power-house, together with 7 4-inch branches leading to the stand-pipes in the pavilion and café. Five stand-pipes have also been installed on the piazza north of the archway. Fifteen hundred feet of 2-inch hose have been placed in the pavilion, café and hotel in addition to the 800 feet already in the hotel. A hydrant has also been located in the café yard and one near the merry-go-round. The protection of the property on this reservation against damage by fire has thus been very greatly increased, and is now in a very efficient condition, as was demonstrated during the fire at Paragon Park. On that occasion the wind was blowing in such a direction as to carry sparks and fire brands onto the bath-house, hotel and other buildings on the Reservation, and these buildings caught fire in many places. But by keeping the roofs and sides of the threatened buildings wet down by means of the water and hose system that has been installed, and through the energetic work of the superintendent, police officers and all others employed on the Reservation, no essential damage was received. If it had not been for this water-supply service and the hard work of the employees it is probable that all the buildings on the ocean side of the Reservation would have been destroyed.

When the Hotel Nantasket and café were originally acquired by the Commission the building was much in need of repairs and alterations in order to be put in proper condition for hotel purposes. The money was not available at that time to do this at once. Necessary improvements and changes, however, have been gradually made from time to time as the receipts from the rental of the hotel would allow, and a portion of the buildings have been placed in a very satisfactory condition. This improvement will be continued until all the buildings are in the same excellent condition.

The public use of the bath-house the past season was greater than during any previous season. The bath-house was open for use on July 4 and closed on September 4, being open, altogether, sixty-three days. The number of people patronizing the bath-house this year was 51,240, of whom 27,983 were males



and 23,257 females. The total receipts were \$11,187.40, and the total expenditures were \$11,012.13. In order to furnish additional accommodations for bathing for the public during the extremely hot weather, a temporary emergency bathing room was provided by enclosing a portion of the space under the bath-house platform. At this place provision was made for the care of the clothing of the bathers, and 5 cents was charged for admission and the use of a towel. The total cost of providing and maintaining this emergency bath-room was \$335.02. This temporary bath-house was put in commission July 21, and was used during the time it was in operation, in July by 94 persons, in August by 102, and in the four days in September by 24 persons, — a total of 220 in all. The total receipts for the use of this emergency room were \$11.

### 3. MISCELLANEOUS.

A special appropriation of \$25,000 was made this year, as in several years past, for band concerts on the lands under the control of the Board. At Revere and Nantasket beaches afternoon and evening concerts were given on July 4 and Labor Day, and every day of the week, except Mondays, from July 5 to September 3, inclusive. At Nahant Beach afternoon and evening concerts were given on Fridays, July 7, 14, 21 and 28, August 4, 11, 18 and 25, and September 1 and 8. Other concerts were given as follows: foot of Great Blue Hill, 7; Stony Brook Reservation, 2; Quincy Shore Reservation, 1; Furnace Brook Parkway, 1; Broadway Park, Somerville, 8; Fellsmere Park, Malden, 4; Cradock Field, Malden, 2; Ell Pond Park, Melrose, 2; Manchester Field, Winchester, 7; Beaver Brook Reservation, 3; Speedway, Brighton, 8; Charles River Road, Watertown, 6; Charles River Reservation, Cambridge, 2; Fox Island, Waltham, 8; Waltham Regatta, 1; Boston Embankment, 11; Chelsea Playground, 3. The total number of concerts given during the season was 316, and the amount expended for these concerts and incidental expenses was \$24,207.55.

The Legislature of 1911 directed the Board to investigate and report on the following matters: (1) relative to making Parker Hill in the city of Boston a part of the Metropolitan

Park System (Resolves, chapter 48); (2) the cost of acquiring land and constructing a boulevard around Lake Quannapowitt in the town of Wakefield (Resolves, chapter 120); (3) the advisability and cost of a parkway connection between Winthrop Parkway in the town of Revere and Winthrop Shore Reservation in the town of Winthrop (Resolves, chapter 135). By chapter 239 of the Acts the Legislature also extended until the next session of the Legislature the time within which the Board should report relative to the advisability of improving the sanitary condition of the Charles River Reservation. Copies of the reports of the Board on these matters will be found in the Appendix.

#### 4. FINANCES.

In that part of his report which deals with the system employed at this office in disbursing money, accounting for receipts and expenditures and in making financial reports, Mr. Scovell, the certified public accountant employed by the Governor, says in regard to the method of payment of employees in vogue: —

This system of handling payrolls and pay envelopes gives an unusually thorough protection against fraud if, as we believe, it is carried out according to the regulation of the Commission. That the policemen are on duty is a matter of record on the time clock. The other employees at work for the Commission are subject to the general oversight of the superintendent. So long as the paymaster adheres strictly to his rule of making all possible payments in person and taking the employee's signature in his presence, it is hard to see how the Commission could be defrauded by dummy entries on the payroll. The careful check in the Boston office assures that the amounts paid are correctly calculated.

Mr. Scovell's report also has this to say about the system of accounting for income transmitted through the Board to the Treasurer and Receiver-General: —

Our study of the methods for handling the bath house income was made only at Revere Beach, as we were informed that the practice is similar at Nahant and Nantasket. At the bath houses the cashiers sell consecutively numbered admission tickets which are dropped into a

chopper as the bathers pass through the turnstile. The accounting for cash exchanged for admission tickets is exact. The cancelled checks from the chopper are returned to Boston and arranged in order as a check against counterfeits. The registration of the turnstile is a further check on any possible misappropriation of tickets deposited in the chopper. This is an admirable system for handling this kind of income, and as it has so many automatic features, it is difficult to see how there can be any irregularity while it is in operation, or how the system could be improved.

Our inquiry into the practice which is followed to collect the income under contracts, leases, etc., showed that the methods established for getting such payments regularly when due are entirely satisfactory. The miscellaneous income of the Commission arising from the sale of junk, etc., from the reservations is collected almost entirely by the superintendents, and owing to the nature of the transactions is not subject to such an exact check as the more regular income from other sources.

Mr. Scovell concluded his report with the general statement that the office work of the Commission which was the subject of his report was on the whole well done, and at a reasonable expense. It is gratifying to note that Mr. Scovell found it necessary to recommend changes in only two particulars. The first suggestion was, in substance, that the wording of the preliminary payroll blank signed by employees should not appear to be an actual receipt of money, but merely an agreement as to the amount of money due the employee. The form of blank Mr. Scovell had in mind has been used many years in the work of the Commission and without objection from the employees so far as known. Steps have been taken, however, to conform to this suggestion of Mr. Scovell. The second suggestion was that the receipts in the Expense Fund should be set forth more in detail. In the accompanying financial tables the payments made into the Metropolitan Expense Fund have been classified in a manner, it is believed, to meet this suggestion. To itemize every payment made into this fund in separate amounts ranging from a few cents to hundreds of dollars, would involve printing this year over 1,350 individual items. Such minutiae of accounting, of course, was not intended, especially as these items are recorded at this office and that of the Auditor. The third suggestion made by Mr. Scovell was that an additional

table summarizing the receipts and expenditures of the Board should accompany the financial report. A new table in the form recommended is appended to this report.

The criticism has occasionally been made that the financial reports of the Board might be simplified and condensed, and in connection with the subject of accounting a word of explanation on this topic may be *apropos*. If the receipts and expenditures of the Board related to one appropriation or one fund alone, the annual financial statement might be much abbreviated. Unfortunately, however, under the law the expenditures of the Board are made from not less than ten separate and distinct funds, namely: from the balance of the Metropolitan Parks Loan, Series I, from the balance of the Metropolitan Parks Loan, Series II, from the Charles River Basin Loan, the Metropolitan Parks Maintenance Fund, the Metropolitan Parks Boulevard Maintenance Fund, the Nantasket Beach Maintenance Fund, the Wellington Bridge Maintenance Fund, the Charles River Basin Maintenance Fund, the Metropolitan Parks Expense Fund, and the Metropolitan Parks Trust Fund. Compliance with the law requires that the expenditures from each of these funds, as well as the receipts in the Metropolitan Parks Expense Fund, be separately accounted for. This requirement unavoidably necessitates an apparent multiplicity of accounts which must continue until the Legislature authorizes some simpler form. It is a matter over which the Board has no control. The financial statements, accompanying this report, therefore, are necessarily in the general form of previous statements, with the exception of the two tables suggested by Mr. Scovell.

### *Loan Appropriations.*

The appropriations heretofore made in the form of loans with accretions thereto are as follows: —

#### METROPOLITAN PARKS LOAN FUND.

Original appropriation, chapter 407, Acts of 1893, .	\$1,000,000 00
First Revere Beach Act, chapter 483, Acts of 1894, .	500,000 00
Charles River Act, chapter 509, Acts of 1894, .	300,000 00
Second Revere Beach Act, chapter 305, Acts of 1895, .	500,000 00



General appropriation, chapter 466, Acts of 1896, .	\$1,000,000 00
General appropriation, chapter 464, Acts of 1897, .	500,000 00
General appropriation, chapter 530, Acts of 1898, .	1,000,000 00
Revere Beach Bath-house Act, chapter 142, Acts of 1899, . . . . .	125,000 00
General appropriation, chapter 396, Acts of 1899, .	300,000 00
Charles River Improvement Act, chapter 465, Acts of 1900, . . . . .	50,000 00
Fuller's Wharf Act, chapter 467, Acts of 1900, . .	30,000 00
General appropriation, chapter 445, Acts of 1901, .	450,000 00
Mystic River Bridge Act, chapter 492, Acts of 1901, .	200,000 00
General appropriation, chapter 290, Acts of 1903, .	125,000 00
Newton Upper Falls Bridge Act, chapter 391, Acts of 1903, . . . . .	40,000 00
Continuing appropriation, chapter 429, Acts of 1903, for 1903, . . . . .	300,000 00
For 1904, . . . . .	300,000 00
For 1905, . . . . .	300,000 00
For 1906, . . . . .	300,000 00
For 1907, . . . . .	300,000 00
Nahant Beach Bath-house Act, chapter 326, Acts of 1904, . . . . .	70,000 00
Reimbursing loan for moth expense, chapter 486, Acts of 1906, . . . . .	50,000 00
Purification of Mystic River, Alewife Brook and adjacent water-courses, ponds and drainage areas, chapter 529, Acts of 1906, . . . . .	100,000 00
Additional appropriation for purification of Mystic River, etc., Chapter 529, Acts of 1907, . . . .	25,000 00
Mystic River and Winthrop Shore Act, chapter 652, Acts of 1908, . . . . .	70,000 00
Charles River Land Act, chapter 628, Acts of 1910, .	50,000 00
Alewife Brook Purification Act, chapter 458, Acts of 1911, . . . . .	15,000 00
	<hr/>
	\$8,000,000 00
To provide for interest and sinking fund requirements to 1900, chapter 311, Acts of 1897, . . .	900,000 00
	<hr/>
Total amount of loans, . . . . .	\$8,900,000 00
Amounts received from sales of buildings, receipts from bath-house, fines, etc., . . . . .	198,334 01
	<hr/>
Total, . . . . .	\$9,098,334 01



## METROPOLITAN PARKS LOAN FUND, SERIES II.

Original boulevard, chapter 288, Acts of 1894, . . .	\$500,000 00
General appropriation, chapter 472, Acts of 1896, . . .	500,000 00
General appropriation, chapter 521, Acts of 1897, . . .	1,000,000 00
Saugus Bridge Act, chapter 547, Acts of 1898, . . .	100,000 00
General appropriation, chapter 428, Acts of 1899, . . .	500,000 00
Mattapan Bridge Act, chapter 443, Acts of 1900, . . .	75,000 00
Winchester Act, chapter 444, Acts of 1900, . . .	50,000 00
Revere Beach Parkway Act, chapter 445, Acts of 1900, . . .	200,000 00
General appropriation, chapter 172, Acts of 1902, . . .	450,000 00
General appropriation, chapter 359, Acts of 1903, . . .	110,000 00
Continuing appropriation, chapter 419, Acts of 1903, for 1903, . . . . .	300,000 00
For 1904, . . . . .	300,000 00
For 1905, . . . . .	300,000 00
For 1906, . . . . .	300,000 00
For 1907, . . . . .	300,000 00
Alewife Brook and Fresh Pond, Parkway Act, chapter 651, Acts of 1908, . . . . .	50,000 00
	<hr/>
	\$5,035,000 00
To provide for interest and sinking fund requirements to 1900, chapter 311, Acts of 1897, . . . . .	100,000 00
	<hr/>
Total amount of loans, . . . . .	\$5,135,000 00
Receipts from sales, etc., . . . . .	29,907 41
	<hr/>
Total, . . . . .	\$5,164,907 41

## NANTASKET BEACH LOAN.

Appropriation, chapter 464, Acts of 1899, . . . . .	\$600,000 00
Appropriation, chapter 456, Acts of 1901, . . . . .	100,000 00
	<hr/>
Total amount of loans, . . . . .	\$700,000 00
Receipts from rents, etc., . . . . .	5,881 50
	<hr/>
Total, . . . . .	\$705,881 50

## CHARLES RIVER BASIN LOAN.

Bonds issued for 1904, . . . . .	\$250,000 00
Bonds issued for 1905, . . . . .	400,000 00
Bonds issued for 1906, . . . . .	600,000 00
Bonds issued for 1907, . . . . .	1,150,000 00

Bonds issued for 1908, . . . . .	\$400,000 00
Bonds issued for 1909, . . . . .	850,000 00
Bonds issued for 1910, . . . . .	475,000 00
Bonds issued for 1911, . . . . .	300,000 00
<hr/>	
Total amount of bonds, . . . . .	\$4,425,000 00
Receipts added to loan, . . . . .	9,340 75
<hr/>	
	\$4,434,340 75

*Expenditures from Loans.*

The following tables show the total amount expended in each of the foregoing loans, the total cost of each reservation and parkway to Dec. 1, 1911, and the amount charged by the Auditor's department to meet the sinking fund and interest requirements previous to Jan. 1, 1900. The item of "Miscellaneous" in these tables includes cost of construction of roads, buildings and of all other work of construction, and all other charges against these loans except those for land, general expenses, sinking fund and cost of maintenance required by law to be charged to loans up to 1897. The total charges for maintenance to 1897, general expenses and sinking fund are given separately at the end of the tables. The total amounts charged to land are as follows: Metropolitan Parks Loan, \$5,291,204.44; Metropolitan Parks Loan, Series II., \$1,750,287.25; Nantasket Beach Loan, \$603,329.57.

The amounts expended from these loans for the fiscal year ending Nov. 30, 1911, are stated in tables on pages 84 and 85 in the Appendix.

METROPOLITAN PARKS LOAN FUND.

Blue Hills Reservation:—

Land, . . . . .	\$363,347 29
Miscellaneous, . . . . .	287,172 72
<hr/>	
	\$650,520 01

Middlesex Fells Reservation:—

Land, . . . . .	\$690,782 43
Miscellaneous, . . . . .	287,401 81
<hr/>	
	978,184 24

Revere Beach Reservation:—

Land, . . . . .	\$1,162,947 67
Miscellaneous, . . . . .	799,527 38
<hr/>	
	1,962,475 05

## Stony Brook Reservation:—

Land, . . . . .	\$281,243 87
Miscellaneous, . . . . .	75,811 92

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 \$357,055 79

## Beaver Brook Reservation:—

Land, . . . . .	\$29,819 29
Miscellaneous, . . . . .	23,937 71

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 53,757 00

## Hemlock Gorge Reservation:—

Land, . . . . .	\$53,254 00
Miscellaneous, . . . . .	15,543 94

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 68,797 94

## Charles River Reservation:—

Land, . . . . .	\$1,477,047 55
Miscellaneous, . . . . .	305,994 68

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 1,783,042 23

## Neponset River Reservation:—

Land, . . . . .	\$224,783 04
Miscellaneous, . . . . .	46,407 97

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 271,191 01

## Mystic River Reservation:—

Land, . . . . .	\$242,533 21
Miscellaneous, . . . . .	379,322 51

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 621,855 72

## Lynn Shore Reservation:—

Land, . . . . .	\$361,199 29
Miscellaneous, . . . . .	243,580 01

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 604,779 30

## Quincy Shore Reservation:—

Land, . . . . .	\$73,726 26
Miscellaneous, . . . . .	198,159 19

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 271,885 45

## Winthrop Shore Reservation:—

Land, . . . . .	\$51,067 32
Miscellaneous, . . . . .	169,249 43

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 220,316 75

## Hart's Hill Reservation:—

Land, . . . . .	\$10,000 00
Miscellaneous, . . . . .	202 35

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 10,202 35

## King's Beach Reservation:—

Land, . . . . .	\$24,297 21	
Miscellaneous, . . . . .	1,551 63	
	<hr/>	\$25,848 84

## West Roxbury Parkway:—

Land, . . . . .	\$244,976 01	
Miscellaneous, . . . . .	8,313 67	
	<hr/>	253,289 68

## Wellington Bridge:—

Miscellaneous, . . . . .	\$185,317 42	
	<hr/>	185,317 42

## Nahant Beach Bath-house:—

Miscellaneous, . . . . .	\$67,794 58	
	<hr/>	67,794 58

## Boylston Street Bridge:—

Miscellaneous, . . . . .	\$45,838 57	
	<hr/>	45,838 57

## Alewife Brook Purification:—

Miscellaneous, . . . . .	\$122,965 82	
	<hr/>	122,965 82

General expense, . . . . .		163,371 12
		<hr/>
		\$8,718,488 87

Sinking fund requirements to 1896, .	\$18,980 18	
Care and maintenance to July 1, 1896, .	85,813 46	
Care and maintenance, July 1, 1896, to Jan. 1, 1897, . . . . .	19,604 06	
Sinking fund assessment for 1897, .	63,630 70	
Sinking fund assessment for 1898, .	9,755 55	
Sinking fund assessment for 1899, .	64,224 00	
Interest, . . . . .	28,318 61	
	<hr/>	290,326 56

Total charged to Dec. 1, 1911, . . . . . \$9,008,815 43

Balance Dec. 1, 1911, . . . . . 89,518 58

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\$9,098,334 01

## METROPOLITAN PARKS LOAN FUND, SERIES II.

## Blue Hills Parkway:—

Land, . . . . .	\$133,492 02	
Miscellaneous, . . . . .	269,513 47	
	<hr/>	\$403,005 49

## Middlesex Fells Parkway:—

Land, . . . . .	\$262,518 33
Miscellaneous, . . . . .	577,168 86

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 \$839,687 19

## Mystic Valley Parkway:—

Land, . . . . .	\$203,990 91
Miscellaneous, . . . . .	314,918 72

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 518,909 63

## Revere Beach Parkway:—

Land, . . . . .	\$537,445 51
Miscellaneous, . . . . .	858,921 01

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 1,396,366 52

## Neponset River Parkway:—

Land, . . . . .	\$83,941 75
Miscellaneous, . . . . .	36,100 54

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 120,042 29

## Fresh Pond Parkway:—

Land, . . . . .	\$44,086 25
Miscellaneous, . . . . .	29,823 24

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 73,909 49

## Furnace Brook Parkway:—

Land, . . . . .	\$166,397 77
Miscellaneous, . . . . .	140,111 91

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 306,509 68

## Nahant Beach Parkway:—

Land, . . . . .	\$80,940 78
Miscellaneous, . . . . .	75,014 13

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 155,954 91

## Lynn Fells Parkway:—

Land, . . . . .	\$40,468 46
Miscellaneous, . . . . .	126,368 88

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 166,837 34

## Winthrop Parkway:—

Land, . . . . .	\$38,489 34
Miscellaneous, . . . . .	45,738 86

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 84,228 20

## Alewife Brook Parkway:—

Land, . . . . .	\$138,016 13
Miscellaneous, . . . . .	10,485 91

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 148,502 04

## Charles River Speedway:—

Miscellaneous, . . . . .	\$521,348 66
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 521,348 66



## Blue Hills Roads:—

Miscellaneous, . . . . .	\$8,742 06	
	<hr/>	\$8,742 06

## Middlesex Fells Roads:—

Miscellaneous, . . . . .	\$57,495 50	
	<hr/>	57,495 50

## Stony Brook Roads:—

Miscellaneous, . . . . .	\$37,183 45	
	<hr/>	37,183 45

## Lynnway:—

Land, . . . . .	\$20,500 00	
Miscellaneous, . . . . .	124,366 10	
	<hr/>	144,866 10

## Spy Pond Parkway:—

Miscellaneous, . . . . .	\$89 04	
	<hr/>	89 04

General expense, . . . . .		107,090 19
		<hr/>
		\$5,090,767 78

Sinking fund requirement for 1896, . . . . .	\$3,650 03	
Sinking fund requirement for 1897, . . . . .	14,057 10	
Sinking fund requirement for 1898, . . . . .	3,765 08	
Sinking fund requirement for 1899, . . . . .	15,396 00	
One-half interest, . . . . .	22,327 68	
	<hr/>	59,195 89

Total charged to Dec. 1, 1911, . . . . .	\$5,149,963 67	
Balance Dec. 1, 1911, . . . . .	14,943 74	
	<hr/>	\$5,164,907 41

## NANTASKET BEACH LOAN.

Land, . . . . .	\$603,329 57	
Miscellaneous, . . . . .	102,551 93	
	<hr/>	
Total charged to Dec. 1, 1911, . . . . .	\$705,881 50	

## CHARLES RIVER BASIN LOAN.

Expended from beginning of work to Dec. 1, 1911, . . . . .	\$4,218,916 54	
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The above amount has been distributed as follows: —

Administration, . . . . .	\$108,025 16	
Dam, . . . . .	1,060,010 18	
Lock, . . . . .	721,861 96	
Temporary bridge and approaches, .	184,845 36	
Drawbridge, . . . . .	100,341 06	
Highway, . . . . .	55,547 85	
Dredging, pile-driving and protection work in Basin, . . . . .	149,276 55	
Broad Canal, . . . . .	117,221 64	
Lechmere Canal, . . . . .	52,052 80	
Boston Embankment, . . . . .	837,559 19	
Boston Marginal Conduit, . . . . .	635,351 96	
Cambridge Marginal Conduit, . . . . .	99,442 48	
Elimination of malarial mosquitoes, .	1,173 68	
Landing piers, . . . . .	7,498 16	
Maintenance, . . . . .	88,708 51	
	<hr/>	\$4,218,916 54

Respectfully submitted,

GEO. LYMAN ROGERS,

*Secretary.*

DEC. 1, 1911.

## REPORT OF THE ENGINEER.

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HON. WILLIAM B. DE LAS CASAS, *Chairman, Metropolitan Park Commission.*

SIR: — I submit herewith a report of the work of the Engineering Department for the year ending Nov. 30, 1911.

The force employed in the department has varied during the year from 15 to 23, including a clerk and stenographer, and has averaged about 20.

The work of construction and maintenance has been done under the direction and supervision of the department, and engineering services and inspection have been furnished for the work.

On account of the fact that the maintenance appropriations were not made until July, the greater portion of the work of repairs and maintenance of roadways was done during the latter part of the season and, on account of unfavorable weather conditions, it was impossible to do the work as satisfactorily or as economically as when it is done in the warmer and dryer months in the early part of the summer.

All the roads upon which automobiles are allowed — a total length of about 50 miles — are now protected with refined tars or asphaltic oils, either in their construction or by surface treatments. The only exceptions are a portion of Quincy Shore Drive, about 1.5 miles, Fresh Pond Parkway, about .5 of a mile, and Nantasket Beach Reservation Road, about .7 of a mile. I recommend that these, excepting Fresh Pond Parkway, be so treated next year.

The locks, drawbridges and gates at the Charles River Dam have been repaired, maintained and operated under the direction of this department.

The cost of conducting the department has been as follows:—

Engineering:—					
Construction:—					
Services,	.	.	.	\$7,312	27
Expenses,	.	.	.	383	77
				<hr/>	\$7,696 04
Maintenance:—					
Services,	.	.	.	\$14,203	36
Expenses,	.	.	.	1,937	97
.	.	.	.	<hr/>	16,141 33
Total,	.	.	.	<hr/>	\$23,837 37

The cost of the construction work which has been done under the supervision of this department has amounted to \$84,-661.51, exclusive of the cost of engineering and inspection.

Details of the work done under the direction and supervision of this department are given under the following sections of parkway and reservation and in the tables appended.

#### CONSTRUCTION.

##### *Parkways.*

*Alewife Brook Parkway.*—The work of excavating the new channel for Alewife Brook was suspended from about Jan. 1, 1911, to Sept. 1, 1911, as all available funds had been expended. The work remaining to be done to complete the purification work and work incidental thereto, as far as authorized, was the finishing of slopes of the new channel, excavation of new channel for Little River and the upper section of Alewife Brook to Concord Avenue, and building fences on retaining walls near Broadway, Somerville and Arlington. Funds were appropriated for this work and it was resumed about Sept. 1, 1911, under the contract with the Eastern Dredging Company. All the work of excavation has been completed, except the upper section of Alewife Brook, which is in progress and will be completed about Dec. 15, 1911.

Plans and specifications have been prepared for building a

galvanized iron pipe rail fence on the retaining walls near Broadway. The total length of fence is about 1,850 feet. The following bids were received on Sept. 26, 1911:—

Smith & Lovett Company, Boston, . . . . .	\$3,339 25
Fred A. Houdlett & Sons, Inc., Boston, . . . . .	2,997 00
A. B. Robbins Iron Company, Quincy, . . . . .	2,664 00
W. A. Snow Iron Works, Inc., Boston, . . . . .	2,386 50
Vulcan Rail and Construction Company, Boston, . . . . .	2,201 50
Norcross Brothers Company, Boston, . . . . .	2,183 00

The contract was awarded to Norcross Brothers Company, the lowest bidders. The shop work is in progress and work of erection is to begin about Dec. 15, 1911.

Proposals for building a wooden bridge for Hill Road over the new channel were received on Dec. 5, 1910, as follows:—

George A. Cahill, Boston, . . . . .	\$1,356 00
Albert A. Hersey, East Boston, . . . . .	1,190 00
W. S. Rendle & Son, East Boston, . . . . .	1,144 50
W. H. Ellis, Boston, . . . . .	1,069 00
Lawler Brothers, Charlestown, . . . . .	973 00

The contract was awarded to Lawler Brothers and the work completed on Jan. 14, 1911.

The cost of all work on the Alewife Brook purification to Dec. 1, 1911, as certified by this department, has been as follows:—

*Previously reported.*

Construction and incidentals, Contract No. 125, . . . . .	\$32,470 53	
Changing location and lowering Metropolitan sewers, . . . . .	3,896 89	
Engineering and inspection, . . . . .	1,712 78	
Total, . . . . .	—	\$38,080 20
Construction and incidentals, Contract No. 126, . . . . .	\$25,429 79	
Underpinning Broadway and Massachusetts Avenue bridges, . . . . .	8,483 18	
Engineering and inspection, . . . . .	1,615 91	
Total, . . . . .	—	35,528 88



Construction and incidentals, Contract No. 130, .	\$43,869 80	
Engineering and inspection,	1,763 10	
	<hr/>	\$45,632 90

*Year ending Nov. 30, 1911.*

## Contract No. 130:—

Contract estimates, . . . . .	\$4,786 22	
Additional labor and materials, . . . . .	390 13	
Engineering expenses, . . . . .	13 54	
Engineering services, . . . . .	520 10	
	<hr/>	\$5,709 99
Total, . . . . .		<hr/> \$51,342 89

## Contract No. 136:—

Contract estimates, . . . . .	\$973 00	
Additional labor and materials, . . . . .	16 96	
Engineering expenses, . . . . .	2 15	
Engineering services, . . . . .	96 70	
Total, . . . . .	<hr/>	1,088 81

## Contract No. 145:—

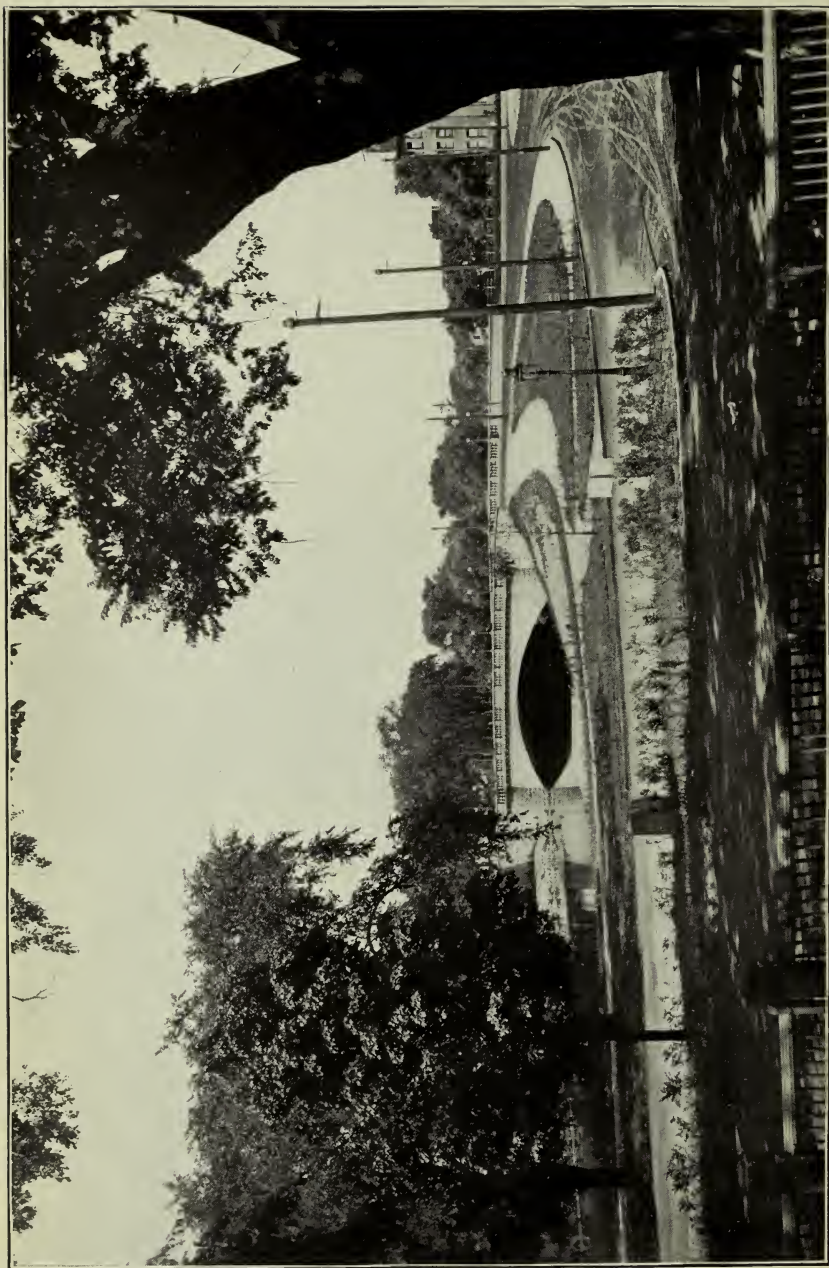
Engineering expenses, . . . . .	\$0 20	
Engineering services:—		
Preliminary, . . . . .	55 05	
Total, . . . . .	<hr/>	55 25

Grand total, . . . . . \$126,096 03

*Lynn Fells Parkway.*—Plans and specifications have been prepared for surfacing and finishing the portion of the parkway through Ell Pond Park from Tremont Street to Melrose Street. Proposals were received on Feb. 6, 1911, as follows:—

Henry G. Porter, Middleborough, . . . . .	\$15,462 40
Luigi C. Carchia, Boston, . . . . .	13,146 60
Fred E. Ellis, Melrose, . . . . .	12,908 16
Grant Construction Company, Boston, . . . . .	12,831 96
Coleman Brothers, Boston, . . . . .	12,515 20
Thomas FitzGibbon, Beverly, . . . . .	12,066 00
Richmond F. Hudson, Wilmington, . . . . .	11,595 00
P. F. Giovannini, Boston, . . . . .	11,558 80
Martin & Condon, Watertown, . . . . .	11,434 90
Ciriaco & Guiceppi Bevilacqua, Boston, . . . . .	11,178 60
James H. Fannon, Somerville, . . . . .	11,067 90
Rowe Contracting Company, Brighton, . . . . .	10,156 40





CHARLES RIVER RESERVATION. — Charles River Road at Galen Street Bridge.

The contract was awarded to Rowe Contracting Company, and the work begun on March 20, 1911, and completed on July 29, 1911.

This is the section through the swamp on which excessive settlements have taken place since grading was begun, and although the settlement has practically ceased, it was thought inadvisable to surface the roadway with macadam, as on the other sections of the parkway. Therefore, a gravel surface was built, so that if further settlement takes place it may be more easily and economically built up. The reinforced concrete culvert near Melrose Street, which was damaged by the settlement of the fill, has been repaired to provide a clear waterway.

The total cost of this work, as certified by this department, has been as follows: —

Contract No. 137: —	
Contract estimates, . . . . .	\$10,784 29
Additional labor and materials, . . . . .	168 33
Engineering expenses, . . . . .	138 87
Engineering services: —	
Preliminary, . . . . .	\$308 49
Actual, . . . . .	1,295 55
	<hr/>
	1,604 04
	<hr/>
Total, . . . . .	\$12,695 53

*Winthrop Parkway.* — The work of surfacing and finishing the parkway, from Charles Eliot Circle to Leverett Avenue, has been completed. The work was done by the forces of the division, and the cost of the work done this year has been \$4,589.65.

#### *Reservations.*

*Charles River Reservation, Lower Basin.* — Six public landings have been built in the basin, one near Cambridge Bridge, one near Berkeley Street, two at Harvard Bridge, one at Western Avenue, Brighton, and one at Watertown. With the exception of the one at Western Avenue, they were built of wood, on oak pile foundations. They are of substantial construction and are from 50 to 100 feet in length by 20 to 25 feet in width.

Plans and specifications have been prepared, and on April 25, 1911, the following proposals were received for the 5 wooden landing piers:—

W. H. Ellis, Boston, . . . . .	\$8,885 00
George T. Rendle, Boston, . . . . .	7,545 00
Lawler Brothers, Charlestown, . . . . .	7,380 00

The contract was awarded to Lawler Brothers; the work was begun on May 18, 1911, and completed on June 28, 1911.

The total cost of the work, as certified by this department, has been as follows:—

Contract No. 138:—

Contract estimates, . . . . .	\$7,427 64
Engineering expenses, . . . . .	2 20
Engineering services:—	
Preliminary, . . . . .	\$167 11
Actual, . . . . .	231 25
	<hr/>
	398 36
	<hr/>
Total, . . . . .	\$7,828 20

The landing at the Western Avenue Bridge was provided for and partly constructed at the time of construction of river wall and playground at this location. It has been completed by laying a concrete surface and building steps and walk to the street.

Plans and specifications have been prepared for excavating tree pits and refilling with loam and manure at the park on the Dam and on the Embankment, from Cambridge Bridge to Charlesgate West. These pits were generally 10 feet square by 4 feet in depth.

On May 29, 1911, the following bids were received for preparing 62 tree pits at the park on the Dam:—

Michael H. Norton, Dorchester, . . . . .	\$4,070 00
Coleman Brothers, Boston, . . . . .	3,080 00
James H. Fannon, Somerville, . . . . .	2,540 00

The contract was awarded to James H. Fannon, the work begun on June 12, 1911, and completed June 29, 1911. The



total cost of this work, as certified by this department, has been as follows:—

Contract No. 139:—

Contract estimates, . . . . .	\$1,767 60
Additional labor and materials, . . . . .	76 80
Engineering expenses, . . . . .	9 05
Engineering services:—	
Preliminary, . . . . .	\$29 50
Actual, . . . . .	104 80
	<hr/>
	134 30
	<hr/>
Total, . . . . .	\$1,987 75

On Sept. 26, 1911, bids were received from the following for preparing 230 tree pits on the Embankment:—

John Kelley Company, Roxbury, . . . . .	\$12,700 00
John McCourt & Co., Boston, . . . . .	11,649 50
Michael H. Norton, Dorchester, . . . . .	10,530 00
James H. Fannon, Somerville, . . . . .	10,430 00
Coleman Brothers, Boston, . . . . .	10,005 00

The contract was awarded to Coleman Brothers, the work begun on Oct. 4, 1911, and finished Nov. 10, 1911. The total cost, as certified by this department, has been as follows:—

Contract No. 143:—

Contract estimates, . . . . .	\$7,622 25
Engineering expenses, . . . . .	87
Engineering services:—	
Preliminary, . . . . .	\$42 34
Actual, . . . . .	96 65
	<hr/>
	138 99
	<hr/>
Total, . . . . .	\$7,762 11

The stop-plank structures for both ends of the large ship-lock, to be used to exclude the water in case of accident to the lock-gates, have been stored in the basement of the stable on the Cambridge side. The structures consist of heavy steel girders and trusses and timbers reinforced by steel I beams.

It was considered advisable to store the materials for the lower end of the lock at a location below the lock and near the

point at which they would be needed in case of emergency, as it would probably be impossible to pass through the lock when they are needed.

Plans and specifications were prepared for a storage house, to be located just behind and near the end of the rest pier below the lock. The building is of wooden construction, set upon pile foundation, and is 60 by 20 feet.

On July 25, 1911, the following proposals were received: —

Louis D. Cadario, Boston, . . . . .	\$3,064 00
J. N. Fish & Co., Boston, . . . . .	2,990 00
Samuel J. Kelley, Jr., Cambridge, . . . . .	2,576 00

The contract was awarded to Samuel J. Kelley, Jr., and work was begun Aug. 23, 1911. Work was suspended for a period of about six weeks, during the consideration of a change of plans, and was resumed again on October 16 in accordance with the original plans and is now practically completed.

The galvanized iron fences built on the Dam, which were completed last year, were not painted at that time, as the paint adheres better if the galvanizing is allowed to weather for a period of six months or more before it is applied.

On July 31, 1911, proposals were received for painting about 6,400 lineal feet of iron fence of different types. The paint was furnished by the Commission and the labor and tools by the contractor.

Shay Brothers, Inc., Roxbury, . . . . .	\$1,898 00
Alpha Company, Jamaica Plain, . . . . .	1,512 20
James H. Fannon, Somerville, . . . . .	1,446 00
Daniel Boorstein & Samuel Wallerstein, Boston, . . . . .	1,413 80
Olson & Johnson, Revere, . . . . .	1,406 00
Nilson Brothers, Boston, . . . . .	1,332 50
O. P. Blomquist Company, Boston, . . . . .	1,074 60
Nicholas J. McNamara, Allston, . . . . .	861 30
American Painting and Decorating Company, Inc., Boston, . . . . .	847 60
Frank E. Cutler, Boston, . . . . .	732 20
Morris M. Devine, Medford, . . . . .	693 40
B. R. Coullahan & Co., Roxbury, . . . . .	421 15

The contract was awarded to B. R. Coullahan & Co., was begun Aug. 15, 1911, and completed Sept. 28, 1911.

The total cost of the work, as certified by this department, has been as follows:—

Contract No. 141:—	
Contract estimates, . . . . .	\$423 14
Materials, . . . . .	276 90
Engineering services:—	
Preliminary, . . . . .	\$13 83
Actual, . . . . .	82 93
	<hr/>
	96 76
	<hr/>
Total, . . . . .	\$796 80

Plans and specifications have been prepared for constructing granolithic walks, gutters and curbs on the park on the Dam and on the Embankment, between Cambridge Bridge and Charlesgate West.

The work on the Dam amounted to about 5,700 square yards, and the price bid was exclusive of the cinder base, which was in place. On Aug. 14, 1911, the following proposals were received:—

W. A. Murtfeldt Company, Boston, . . . . .	\$9,177 00
Simpson Brothers Corporation, Boston, . . . . .	8,310 60
Jeremiah J. Sullivan, Boston, . . . . .	8,208 00
Warren Bros. Company, Boston, . . . . .	7,353 00
James H. Fannon, Somerville, . . . . .	7,125 00
Porter & Pearl, Boston, . . . . .	6,498 00
Lowe-Armington Company, Brookline, . . . . .	6,480 90

The contract was awarded to Lowe-Armington Company, the work begun Aug. 29, 1911, and is now practically finished.

The cost of the work under this contract to Dec. 1, 1911, as certified by this department, has been as follows:—

Contract No. 142:—	
Contract estimates, . . . . .	\$6,139 80
Additional materials, . . . . .	37 95
Engineering expenses, . . . . .	14 60

## Engineering services:—

Preliminary,	.	.	.	.	.	.	\$66 27	
Actual,	.	.	.	.	.	.	601 20	
								<u>\$667 47</u>
Total,	.	.	.	.	.	.		<u>\$6,859 82</u>

On the Embankment about 3,100 square yards of granolithic were to be laid, and the cinder base was in place on this location also. On Sept. 26, 1911, the following proposals were received for this work:—

Warren Brothers Company, Boston,	.	.	.	.	.	\$4,185 00
James H. Fannon, Somerville,	.	.	.	.	.	3,906 00

The contract was awarded to James H. Fannon, the work begun Oct. 13, 1911, and is now practically completed.

The cost of this work to Dec. 1, 1911, as certified by this department, has been as follows:—

## Contract No. 144:—

Contract estimates,	.	.	.	.	.	.	.	\$3,528 00
Engineering expenses,	.	.	.	.	.	.	.	4 94
Engineering services:—								
Preliminary,	.	.	.	.	.	.	\$43 04	
Actual,	.	.	.	.	.	.	216 20	
								<u>259 24</u>
Total,	.	.	.	.	.	.	.	<u>\$3,792 18</u>

During the months of April, May and June the loam areas on the Dam were harrowed, raked and prepared for seeding. Fertilizer was applied, grass seed sown and shrubs planted in the beds prepared for them.

Four arc lamps were installed, and the park opened to the public on July 20, 1911.

Between November 12 and December 1 shrub beds have been prepared on the Embankment along Back Street, and about 7,000 shrubs planted.

All this planting work has been done by the forces of the division under Superintendent West, under the supervision and

with the necessary services of this department. The total cost has been \$2,785.48.

*Mystic River Reservation.* — The work of dredging in the Mystic River, under contract with the Eastern Dredging Company, has been in progress during the year and is now suspended during the winter months. The work is completed up to High Street, and the only portion remaining to be excavated is from High Street to Lower Mystic Lake.

In connection with this work of deepening the channel, the center pier and northerly abutment of the Harvard Avenue Bridge, and both abutments of the High Street Bridge, have been underpinned and strengthened.

The total cost of this work to Dec. 1, 1911, as certified by this department, has been as follows: —

*Year ending Nov. 30, 1910.*

Contract No. 133:—	
Engineering expenses, . . . . .	\$8 70
Engineering services:—	
Preliminary, . . . . .	\$58 05
Actual, . . . . .	255 50
	<hr/>
	313 55
	<hr/>
	\$322 25

*Year ending Nov. 30, 1911.*

Contract No. 133:—	
Contract estimates, . . . . .	\$7,942 06
Additional labor and materials, . . . . .	636 42
Engineering expenses, . . . . .	102 62
Engineering services:—	
Preliminary, . . . . .	\$169 90
Actual, . . . . .	1,547 32
	<hr/>
	1,717 22
	<hr/>
	10,398 32
	<hr/>
Total, . . . . .	\$10,720 57

*Quincy Shore Reservation.* — At the Atlantic Street crossing of the New York, New Haven & Hartford Railroad Company's tracks, the Railroad Company proposed to rebuild the bridge on the same location and of the same width, — 26 feet, — to provide for four tracks instead of two. An agreement was



made between this Commission and the Railroad Company that the Railroad Company would build the bridge on the line of the reservation drive, which varies somewhat from the lines of Atlantic Street, although crossing the railroad at practically the same location, and would build the bridge 54 feet in width instead of 26 feet, provided that this Commission should pay the cost of the additional width of span over the original location and abandon a piece of land outside the railroad location to the Railroad Company, who formerly owned it. The Railroad Company is to build an additional span to the bridge over this adjoining land, to make a better entrance from their main line to a large tract of marsh land now owned by them. The Railroad Company is to pay the whole cost of the additional span, with the full width of 54 feet. The estimated cost of the Commonwealth's portion of the bridge, which includes masonry and superstructure, was \$10,000.

The work is in progress, the masonry abutments and piers having been completed, and it is expected the erection of the steel superstructure will soon be commenced. The old Atlantic Street Bridge has been removed and the street closed temporarily.

The approaches are to be constructed by this Commission. The easterly approach has been filled up to grade with material excavated from the old embankment of Atlantic Street, close by. This work was done by the contractor who built the masonry abutments for the bridge under contract with the Railroad Company.

Plans and specifications have been prepared for grading the westerly approach from Hancock Street, and bids are to be received on Dec. 5, 1911, for this work, which is to furnish in place about 15,000 cubic yards of filling material.

#### MAINTENANCE.

##### *Parkways.*

*Blue Hills Parkway.*—The electric railway track in the center reserved space from Mattapan Bridge to junction with Blue Hill Street Railway tracks has been raised by orders of this department. The tops of the rails were much below the





LYNN SHORE RESERVATION. — Lynn Shore Drive.

general surface of the loam space, and it was necessary to remove the sod each year to keep the tracks clear. This caused a very rough and unfinished appearance at all times and much inconvenience to the Railway Company, on account of water and ice. The conditions are much improved. Engineering services were furnished for this work.

On Oct. 3, 1911, the following proposals were received for building a granolithic walk 5 feet in width in the southerly walk, from Mattapan Bridge to Blue Hill Avenue:—

Adams-Pond Company, Boston, . . .	17 cents per square foot.
W. A. Murtfeldt Company, Boston, . . .	15 cents per square foot.
Warren Brothers Company, Boston, . . .	15 cents per square foot.
Simpson Brothers Corporation, Boston, . . .	14 cents per square foot.

This price did not include cinder base, which was in place. The contract was awarded to Simpson Brothers Corporation, the work was begun on Oct. 9, 1911, and finished Oct. 20, 1911. Three thousand one hundred and ninety-four square feet of walk were laid at a cost of \$447.16.

*Lynnway.* — Two 15 horse-power, alternating current electric motors have been installed for the operation of the draw of Saugus River Bridge. In the past the draw, which is a double leaf Scherzer Rolling Lift Bridge, has been operated by gasoline engines, which required a man on each side of the channel. With the electric motors, both are operated from the house by one man, thereby reducing the cost of operation.

The same change has been made in the equipment of the draw of the Malden River Bridge, Revere Beach Parkway, which is of the same type.

*Middlesex Fells Parkway.* — The work of laying granolithic walks in Fellsway East and West sections, which was begun last year and was suspended during the winter months, was resumed again in June, and about 2,600 lineal feet of walk, 4 feet in width, were laid, in addition to that of last year, making a total of about 6,000 lineal feet.

Where private property abuts the walks on which granolithic was laid, the owners of the property have paid one-half the cost of the granolithic.

The total cost of this work, as certified by this department, has been as follows:—

*Previously reported.*

Contract No. 135:—

Construction and incidentals, . . . .	\$2,235 64	
Engineering and inspection, . . . .	439 90	
		<hr/>
		\$2,675 54

*Year ending Nov. 30, 1911.*

Contract No. 135:—

Contract estimates, . . . . .	\$1,740 32	
Additional labor and materials, . . . .	176 19	
Engineering expenses, . . . . .	11 40	
Engineering services, . . . . .	310 95	
		<hr/>
		2,238 86

Total, . . . . .	\$4,914 40	
Less amount paid by private abutters, . . . .	1,162 28	
		<hr/>
		\$3,752 12

The section of the northerly roadway from Fulton Street to Forest Street, about 1,400 feet in length, has been resurfaced with gravel. The work has been done by the forces of the division.

*Mystic Valley Parkway.*—Sections of the roadway have been reconstructed with a broken stone base and gravel surface, which practically completes the reconstruction in this manner of the whole parkway drive from West Medford to Winchester.

*Revere Beach Parkway.*—Electric motors have been installed at Malden River Bridge for the operation of the draw, as at the Saugus River Bridge.

Repairs have been made to the concrete arch culvert bridge between Main Street, Everett and Malden River. This work was done by means of the cement gun, with which extensive repairs were made on the Lynn Shore sea wall, and which is fully described under Lynn Shore Reservation section.

The gravel surface of the northerly roadway between Everett Avenue and Second Street, Everett, has been scarified and resurfaced, to remove the wavy condition which existed.



The steel bridges over the Boston & Maine Railroad at Revere Station, and over the Boston, Revere Beach & Lynn Railroad at Beachmont, have been painted. The work in each case was done by the Railroad Company and the cost paid by the Commission.

The marsh land owned by the Commonwealth in Chelsea, between Garfield Avenue and Broadway, an area of about 21 acres, has been ditched for the purpose of abating the mosquito nuisance. The work was done in conjunction with similar work by the city of Chelsea in this section. The work was done by the United States Drainage and Irrigation Company, with special, patented tools, and a total of 10,849 lineal feet of ditch was excavated at  $2\frac{1}{2}$  cents per foot, — a total cost of \$271.23.

#### *Reservations.*

*Charles River Reservation, Lower Basin.* — During February of this year the lock-gates of the main ship-lock were cleaned and painted with two coats, three of the filling gates repaired, and the recesses cleaned. To do this work the gates were drawn into the recesses in the houses, stop-planks placed in the outer end, and the recesses pumped out. The use of the lock for navigation was suspended during a period of ten days for the work on each gate. The work was done by the regular force at the lock, assisted by a force of about 25 painters furnished by A. G. Danielson. The total cost for labor and materials, not including the regular force employed at the lock, was \$2,156.10.

The inside of these gates and the trucks have been examined twice since the above repairs, and the main lock has been pumped out 4 times during the year for inspection and minor repairs and filling of grease cups on filling gates.

The operation of the heating plant was discontinued as usual from May 12 to October 7, during which time the fire boxes were relined, new cheek plates installed, the blow-offs changed and general inspection and repairs made. The boilers were inspected by the State Inspector and are in good condition.

Two semaphore signals, one at each end of the lock, were installed, and are of great assistance in the handling of the traffic.

The surface planking of the drawbridge has been renewed twice during the year. The work has been done by the regular force employed at the Dam.

On account of a slight variation in the landing of the outer ends of the drawbridges from time to time, which put out of alignment the stationary and movable ends of the street railway tracks, it was necessary to install guides to prevent this variation. The guides were designed by this department and installed by our own force.

Insulating rail joints have been installed by the Boston Elevated Railway Company on both tracks on the west end of the drawbridge, which have apparently stopped all electrolysis on the drawbridge structure.

The small boat lock was operated for the passage of boats from May 29 to November 6 and on the two following Saturdays and Sundays. During the remainder of the year the small boat traffic is so light that it is passed through the main ship-lock, and the small lock is put out of commission.

A provision of the act establishing rules and regulations for traffic in the Basin requires us to keep the channels and canals below Cambridge Bridge clear of obstructions by ice. To comply with this provision it is necessary to employ tow boats during the winter months to break up the ice in these channels and canals.

Proposals for furnishing tow boats for this work were received on Nov. 28, 1910, and that of the lowest bidder, J. P. O'Riorden, at \$3.25 per hour, was accepted. Between Dec. 1, 1910, and March 7, 1911, the boats were used a total of 990½ hours, equivalent to about one hundred and twenty-four eight-hour days. The total cost of this work has been \$3,219.13.

The Boston Marginal Conduit has been inspected, cleaned and flushed twice during the year. It is in good condition.

A set of heavy screens have been placed in the Fens Gate House at the end of the Stony Brook Conduit, and they have checked the flow of rubbish and débris from entering the Basin and the Boston Marginal Conduit.

The Cambridge Marginal Conduit has been flushed twice during the year and the tide gates at end repaired.

A wire cable has been strung over the sluices for a life line, to which the men are attached by means of body belts when running ice through the sluices. In December last an employee, George Ayres, while engaged in this work, fell into the water and was drowned.

The force employed for the operation of the locks, bridges and other equipment at the Dam is as follows: —

Electrical Engineer Superintendent,	. . . . .	1
Electricians,	. . . . .	5
Drawtenders and lockmen,	. . . . .	16
Firemen,	. . . . .	4
Foreman,	. . . . .	1
Mechanics,	. . . . .	5

The following is a record of the traffic and freights which passed through the locks during the year: —

*Main Lock.*

Number of openings, 3,209; number of vessels, 3,546; and 2,225 small boats.

Lumber,	. 23,487,405 ft. B. M.	Granite,	. 8,810 tons.
Piling,	. 640,901 lin. ft.	Oil,	. 144,700 bbls.
Coal,	. 334,780 tons.	Paving,	. 64,800 blocks.
Gravel,	. 2,841 tons.	Wood,	. 544 cords.
Sand,	. 28,533 tons.	Iron pipe,	. 465 tons.

*Small Boat Lock.*

Number of openings, 3,065; number of boats, 4,029.

Certain areas in the Basin have been designated for the mooring of boats, and these areas have been marked by white can buoys.

*Charles River Reservation, Riverside Division.* — A plan has been prepared for a landing float in the river, near Moody Street, Waltham. On Oct. 17, 1911, proposals were received for building this float, and that of William O. Harris, the lowest, was accepted. The work was completed Oct. 24, 1911, at a total cost of \$145.

Engineering services have been furnished for staking baseball field at Auburndale, and for work on half-mile oval track at the Speedway.

*Lynn Shore Reservation.* — The section of the sea wall near Red Rock and northerly therefrom, a total length of about 2,000 feet, has become badly pitted by the action of the sea and frost on porous concrete, and in some places near the beach-level holes 6 to 8 inches in depth have been made. Efforts have been made to repair this damage by patching by hand, but it was found to be practically impossible to make the patches waterproof, and they would not withstand the water and frost. Also, the patchy appearance of this section of the wall was unsightly.

Arrangements were made in June for the employment for this work of the cement gun, a recently developed machine for placing cement and sand mortar by air pressure, with a hose and nozzle. With this machine not only could the holes be compactly and tightly filled, but also the whole face of the wall in this section was given a thin coating, which sealed it so as to prevent further pitting, and gave a smooth and regular appearance to the whole face, which was previously patched and ragged.

The whole plant, which consists of a gasoline motor compressor and the gun, was located on the roadway and promenade above the wall, was mounted on trucks, and was easily moved along as the work progressed. One of the principal advantages of this method was that there was no equipment to be removed from the beach at each high tide, as in the case of hand work.

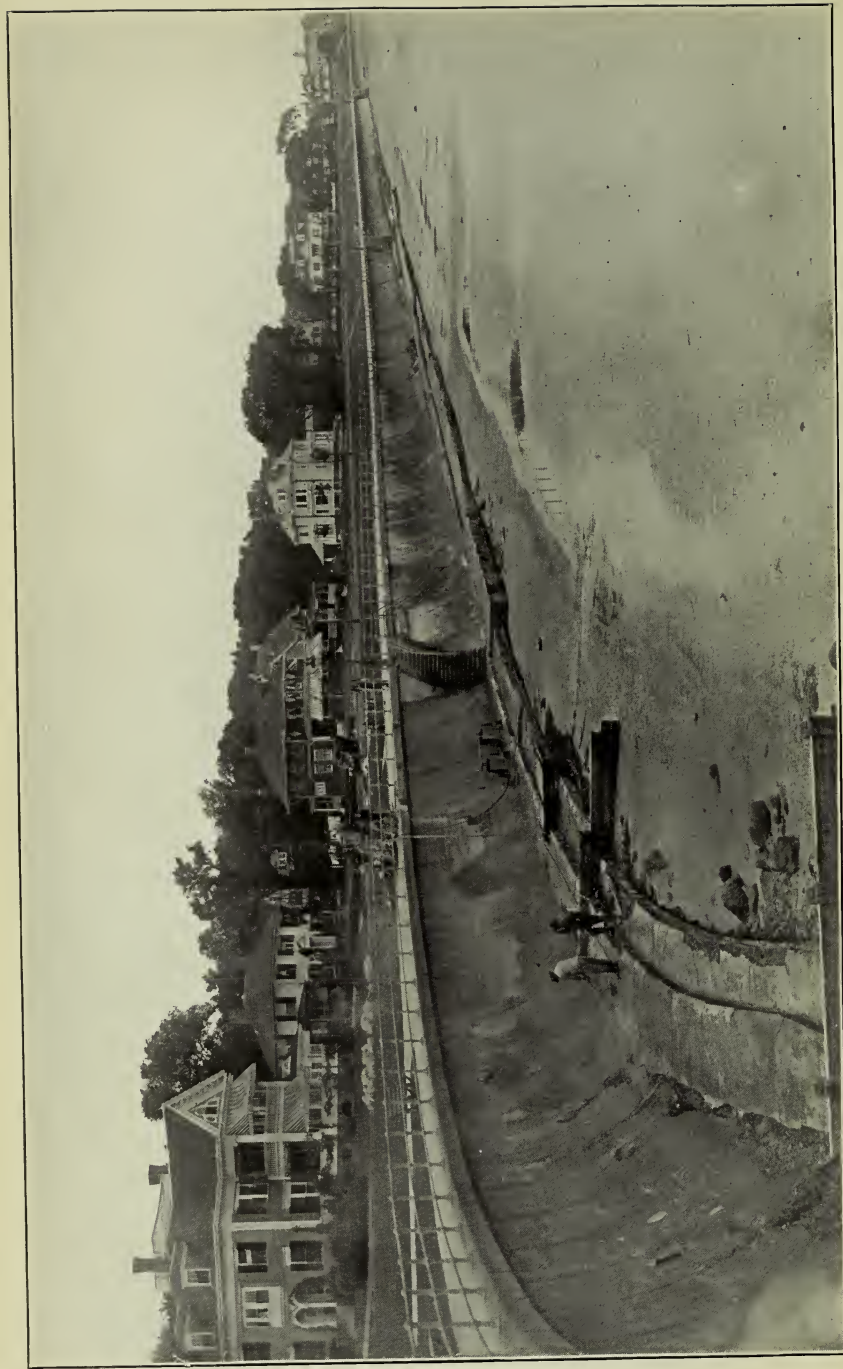
The work was rapidly and economically done with this machine and, up to the present, the results have been very satisfactory.

The work was begun June 17 and completed July 15. About 32,000 square feet of wall face were covered, at a total cost of \$2,481.16 for all labor, materials and rental of machine.

*Middlesex Fells Reservation.* — Portions of Forest and Main streets, the main thoroughfares through the Reservation, have been reconstructed with a broken stone base and gravel surface. In the section from Half Mile Road to Brooks Road so reconstructed, the lines were changed to ease the sharp curve near Brooks Road.







LYNN SHORE RESERVATION. — Use of Cement Gun for repairing Sea Wall.

The section from Chandler Road to Bear Hill Road was resurfaced with gravel.

At the junction of Pond Street and Emerson Street Border Road, and at the junction of Ravine Road and Washington Street, new connections have been built to improve the sharp turns at these points.

Studies and preliminary plans have been made for refectory, shelter and landings at junction of electric railways near Brooks Road.

*Mystic River Reservation.* — A 25 horse-power, electric motor and operating machinery have been installed for the operation of the gates of the boat-lock at Cradock Bridge Dam. The gates have previously been operated by hand power and by the change to electric power it is expected to reduce the cost of operation. The motor used was one of two motors which were removed from the temporary bridge at Charles River Dam, and were in storage at Revere Beach Division.

The cost of this work, the labor for which was done by the regular forces at the Dam, with the assistance of an electrician and machinist from Revere Beach Division, has been \$1,175.68.

On Nov. 17, 1911, the following proposals were received for furnishing all labor and materials necessary to install 14 electric incandescent lamps at Cradock Bridge Dam and Locks: —

Barnes-Pope Electric Company, Boston, . . . . .	\$485 00
Deane & Lobdell, Boston, . . . . .	388 00
William J. Arbus, Boston, . . . . .	345 00

The proposal of William J. Arbus was accepted and the work is now in progress.

The old wooden bridge over the Mystic River at Jerome Street, which has been closed to public travel on account of its dangerous condition, was removed about May 1, 1911.

*Nantasket Beach Reservation.* — The roadway has been repaired by patching from time to time during the year, and during October and November has been resurfaced with gravel. The total cost of repairs and resurfacing has been \$755.25.

*Quincy Shore Reservation.* — A concrete gate chamber with 4 back-water tide gates has been built at the outer end of the concrete culvert at the southerly end of the Reservation, and two lines of 24-inch cast-iron pipe laid from this chamber, under the beach surface, to about half tide, with tide gate on end of each pipe. This arrangement is to prevent the tide water from flowing into the area west of the shore drive and to allow the surface water from this area to flow out during low tide. The work was done by the forces of the division, and the total cost, including labor and materials, was \$1,409.73.

The work of building an entrance for Bromfield Street into the Reservation drive has been finished. The total cost of this work has been \$1,111.50.

The walk along the westerly side of the Reservation, for its entire length, has been repaired and covered with a layer of stone dust. This was made necessary by the excavation for gas pipe and conduit for police signal system. The Citizens' Gas Light Company of Quincy paid one-half of the cost of this work, the total cost of which was \$511.19.

*Revere Beach Reservation.* — The work of building wooden bulkheads at the northerly end of the reservation and between the bath-house and Revere Street, which was in progress at the time of the last report, has been completed and additional sections built, and repairs made to existing bulkheads during the year.

#### GENERAL.

The same methods as used in the past five years have been employed in the maintenance and repairs of the roadways of the parkways and reservations. Refined tars and asphaltic oils have been used on practically all the roads, and some reconstruction and resurfacing done. The work has been done by the forces of the various divisions, under the direction and supervision of this department. Details of this work are given in the appended Table No. 2.

The bridges under the care and control of this Commission have been inspected twice during the year and report made to the Secretary of their condition, with recommendations for necessary repairs.

One hundred and fifty-seven permits for work in the parkways and reservations have been granted to cities, towns, corporations and individuals, which have required the supervision and inspection of this department, and the cost of the inspection has been \$1,390.01.

The following tables are appended to this report:—

TABLE 1. Data relating to Metropolitan Park System.

TABLE 2. Summary of cost of road repairs and maintenance.

Respectfully submitted,

JOHN R. RABLIN,  
*Engineer.*

DEC. 1, 1911.

*Areas of Reservations and Parkways.*

Grand total, reservations and parkways, . . . .	10,214.77
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*Lengths of Formal Roads constructed.*

Reservations: —					Double Roadways (Miles).	Single Roadways (Miles).	Total Miles.
Charles River,	.	.	.	.	—	5.19	
Lynn Shore,	.	.	.	.	—	.96	
Quincy Shore,	.	.	.	.	—	2.24	
Revere Beach,	.	.	.	.	—	2.70	
Stony Brook,	.	.	.	.	—	2.34	
Winthrop Shore,	.	.	.	.	—	1.07	
							14.50
Parkways: —							
Blue Hills,	.	.	.	.	1.46	.81	
Fresh Pond,	.	.	.	.	—	.52	
Furnace Brook,	.	.	.	.	—	1.49	
Lynn Fells,	.	.	.	.	—	1.04	
Lynnway,	.	.	.	.	—	.69	
Middlesex Fells,	.	.	.	.	4.52	1.09	
Mystic Valley,	.	.	.	.	—	4.99	
Nahant Beach,	.	.	.	.	—	.25	
Neponset River,	.	.	.	.	—	.53	
Rever Beach,	.	.	.	.	3.74	1.50	
Winthrop,	.	.	.	.	—	.42	
							13.33
9.72 *							
* Equivalent in miles of single roadway, . . . .							19.44
Highways transferred by or taken from cities and towns: —						Miles.	
Blue Hills Reservation,	.	.	.	.		1.23	
Middlesex Fells Reservation,	.	.	.	.		6.63	
Nantasket Beach Reservation,	.	.	.	.		.71	
							8.57
Grand total, . . . . .							55.84

All above roads open to automobile traffic except 2.85 miles at Charles River Reservation (Speedway Division), and .81 of a mile at Blue Hills Parkway.

*Lengths of Carriage Roads in Reservations.*

	Miles.
Blue Hills Reservation, . . . . .	28.00
Middlesex Fells Reservation, . . . . .	17.50
Stony Brook Reservation, . . . . .	1.60
Beaver Brook Reservation, . . . . .	.22
Charles River Reservation, . . . . .	3.70
<hr/>	
Total, . . . . .	51.02

*Lights in Parkways and Reservations.*

	Lights.
Blue Hills Parkway (Welsbach), . . . . .	85
Furnace Brook Parkway (Welsbach), . . . . .	43
Middlesex Fells Parkway (Welsbach), . . . . .	235
Middlesex Fells Reservation (Welsbach), . . . . .	29
Middlesex Fells Reservation (electric), . . . . .	40
Mystic Valley Parkway (Welsbach), . . . . .	149
Mystic Valley Parkway, at Cradock Bridge, Medford (electric), . . . . .	14
Lynn Fells Parkway (Welsbach), . . . . .	43
Nantasket Beach Reservation (electric), . . . . .	43
Winthrop Parkway (Welsbach), . . . . .	5
Winthrop Shore Reservation (electric), . . . . .	7
Nahant Beach Parkway (electric), . . . . .	6
Lynn Shore Reservation (Welsbach), . . . . .	44
Lynnway (Welsbach), . . . . .	28
Charles River Reservation, Speedway Section (Welsbach), . . . . .	69
Revere Beach Parkway (Welsbach), . . . . .	168
Fresh Pond Parkway (Welsbach), . . . . .	15
Quincy Shore Reservation (Welsbach), . . . . .	56
Revere Beach Reservation (Welsbach), . . . . .	185
Charles River Reservation, Boston Embankment (electric), . . . . .	104
Charles River Reservation, Lower Basin, Dam and Lock (electric), . . . . .	12
<hr/>	
Total, . . . . .	1,380

*Miles of Seashore.*

	Miles.
Lynn Shore, . . . . .	1.50
Nahant Beach, . . . . .	3.92
Revere Beach, . . . . .	2.74
Winthrop Shore, . . . . .	1.08
Nantasket Beach, . . . . .	1.02
Quincy Shore, . . . . .	1.81
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Total, . . . . .	12.07

*Lengths of Sea Walls.*

	Miles.
Lynn Shore, . . . . .	1.30
Revere Beach, at Northern Circle, . . . . .	.08
Revere Beach, at Eliot Circle, . . . . .	.15
Winthrop Shore, Bridge to Great Head, . . . . .	1.04
Winthrop Shore, near Grover's Cliff, . . . . .	.09
Quincy Shore Reservation, southerly end, . . . . .	.15
Total, . . . . .	2.81

*Miles of River Bank.*

	Miles.
Charles River, . . . . .	27.56
Mystic River, . . . . .	8.16
Neponset River, . . . . .	15.84
Alewife Brook, . . . . .	4.50
Total, . . . . .	56.06

*Bridges.*

Reinforced concrete bridges, . . . . .	8
Steel bridges, . . . . .	9
Wooden bridges, . . . . .	5
Drawbridges, . . . . .	4
Foot bridges, . . . . .	11
Total, . . . . .	37

*Culverts.*

Reinforced concrete and other masonry culverts, . . . . .	21
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*Dams.*

Beaver Brook Reservation, small wooden dams, . . . . .	2
Charles River Reservation, Charles River Basin Tidal Dam, 1,200 feet in length, . . . . .	1
Charles River Reservation, reinforced concrete dam at Wash- ington Street, Newton Lower Falls, 200 feet in length, . . . . .	1
Hemlock Gorge Reservation, reinforced concrete dam in Charles River at Boylston Street, Newton Upper Falls, 90 feet in length, . . . . .	1
Hemlock Gorge Reservation, small reinforced concrete dam on East Branch of river, Newton Upper Falls, . . . . .	1
Mystic Valley Parkway, reinforced concrete tidal dam at Craddock Bridge, 100 feet in length; weirs 400 feet in length, . . . . .	1
Total, . . . . .	7

*Lock-gates, Sluice-gates and Tide-gates.*

Charles River Reservation, Charles River Basin Tidal Dam, 6 lock-gates, 13 sluice-gates, 43 tide-gates.  
Mystic River Reservation, Cradock Bridge Tidal Dam, 2 lock-gates, 4 sluice-gates, 8 tide-gates.  
Quincy Shore Reservation, 8 tide-gates.  
Revere Beach Parkway, 1 tide-gate.

*Police Signal System.*

	Miles.
Blue Hills Division, . . . . .	30
Middlesex Fells Division, . . . . .	18 <sup>1</sup> / <sub>4</sub>
Nantasket Beach Division, . . . . .	2 <sup>1</sup> / <sub>2</sub>
<hr/>	
Total, . . . . .	50 <sup>3</sup> / <sub>4</sub>





TABLE 2. — SUMMARY OF COST OF ROAD REPAIRS AND MAINTENANCE, 1911.

PARKWAY OR RESERVATION.	COST PER SQUARE YARD IN DETAIL.						Total Cost (Cents).	Remarks.	Location.					
	Length (Feet).	Width of Roadway (Feet).	Square Yards.	BITUMINOUS BINDER OR DUST LAYER.										
				Labor (Cents).	Gravel (Cents).	Broken Stone (Cents).				Sand (Cents).	Kind of Material.	Gallons per Square Yard.	Cost (Cents).	Cost of Apply- ing (Cents).
Blue Hills Parkway, .	7,800	36	43,600	1.6	-	-	-	Asphaltic Oil (the Texas Company).	0.14	0.9	1.6	4.10	Surface treatment, Avenue Circle, Milton, including Circle.	{ Mattapan Bridge to Canton Avenue Circle, Milton, Decker Street to Canton Avenue Circle, Milton. Canton Avenue Circle to Hillside Street, and Hill- side Street, Milton. Newton Lower Falls to New- ton Upper Falls, Newton. Soldiers Field Road, BRIGHTON. North Beacon Street to Watertown Square. Entire length, Cambridge. { Adams Street to Cross Street, Quincy. Cross Street to Granite Branch Railroad, Quincy. Granite Branch to Willard Street, Quincy. Willard Street to Blue Hills Reservation, Quincy. Middlesex Fells Reservation to Bellevue Avenue, Melrose.
Blue Hills Parkway, .	4,200	26		1.2	-	-	-	Asphaltic Oil (the Texas Company).	0.31	1.9	-	3.10	Surface treatment,	
Blue Hills Parkway and Reservation.	18,700	18 and 26	40,870	0.8	-	-	-	Asphaltic Oil (Stand- ard Oil Company).	-	1.7	-	2.50	Surface treatment,	
Charles River Reserva- tion.	9,200	40 and 60	55,550	1.6	1.1	-	-	Calcium chloride, .	-	0.9	-	3.60	Surface treatment,	
Charles River Reserva- tion.	5,400	26 and 36	16,320	2.8	0.3	-	0.1	Asphaltic oil (Indian Refining Com- pany).	0.47	2.7	-	5.90	Surface treatment,	
Fresh Pond Parkway, .	2,700	40	12,000	0.6	-	0.4	-	Calcium chloride, .	-	2.4	-	3.40	Surface treatment,	
Furnace Brook Park- way.	3,800	36	31,510	0.7	-	-	-	Asphaltic oil (the Texas Company).	0.39	2.8	-	3.50	Surface treatment,	
Furnace Brook Park- way.	1,850	40		-	-	-	-	-	-	-	-	-	-	Surface treatment,
Furnace Brook Park- way.	500	34		-	-	-	-	-	-	-	-	-	-	Surface treatment,
Furnace Brook Park- way.	1,550	36		-	-	-	-	-	-	-	-	-	-	Surface treatment,
Lynn Fells Parkway, .	5,740	40	25,510	-	-	-	1.2	Asphaltic oil (Stand- ard Oil Com- pany).	0.38	1.8	0.7	3.70	Surface treatment,	

Lynn Shore Reservation.	4,400	340	18,090	3.0	-	1.4	-	Tarvia (Barrett Company), Manufacturing Standard Asphalt Binder (Standard Oil Company).	0.50	4.2	-	48.60	1,559 25	Surface treatment,	Washington Street to Pierce Road.
Middlesex Fells Parkway.	1,400	36	5,600	2.6	15.00	0.5	3.0	-	0.58	5.8	-	26.90	1,505 84	Resurfacing,	Fellway West, Easterly Roadway, Fulton Street to Forest Street, Medford.
Middlesex Fells Parkway.	1,880	30	6,266	1.8	-	1.5	-	Tarite-asphalt (American Tar Company).	0.11	0.9	-	4.20	266 21	Surface treatment (flush coat).	Fellway, Westerly Roadway, Mystic Avenue to Wellington Bridge, Somerville.
Middlesex Fells Parkway.	3,050	26	8,811	2.2	-	2.2	-	Tarite-asphalt,	0.16	1.4	-	5.80	510 62	Surface treatment (flush coat).	Fellway, Westerly Roadway, Revere Beach Parkway to Boston & Maine Railroad Bridge, Medford.
Middlesex Fells Parkway.	2,800	30	9,333	2.1	-	2.2	-	Tarite-asphalt,	0.16	1.4	-	5.70	531 59	Surface treatment (flush coat).	Fellway, Easterly Roadway, Broadway to Wellington Bridge, Somerville.
Middlesex Fells Parkway.	1,500	36	10,333	1.8	-	-	3.5	Standard asphalt binder.	0.56	5.6	-	10.90	1,123 75	Surface treatment,	Fellway, East, Highland Avenue to Middlesex Fells Reservation, Malden.
Middlesex Fells Parkway.	2,700	36	15,800	0.3	-	-	2.1	Asphaltic oil (Standard Oil Company).	0.39	1.8	1.1	5.30	834 70	Surface treatment,	Fellway, East, Roadway, Medford Street to Pleasant Street, Malden.
Middlesex Fells Reservation.	3,500	19	7,400	1.10	2.0	-	-	Asphaltic oil (Indian Refining Company).	0.324	1.8	1.6	6.50	481 75	Surface treatment,	Fellway, West, Wicklow Street to Salem Street, Medford.
Middlesex Fells Reservation.	3,000	18	6,000	0.45	4.1	-	-	Asphaltic oil (Indian Refining Company).	0.25	1.4	1.2	7.15	430 61	Surface treatment,	Fellway, West, East Roadway, Salem Street to Fells Avenue, Medford.
Middlesex Fells Reservation.	3,000	19	6,330	-	4.1	-	-	Asphaltic oil (Indian Refining Company).	0.38	2.1	1.1	7.30	467 65	Surface treatment,	Forest Street, Medford, Elm Street to Half Mile Road.
															Elm Street, Medford.
															Main Street, Stoneham, Bear Hill Road to New South Street.

<sup>1</sup> Including watering.<sup>2</sup> Cost of oil and heating.<sup>3</sup> Includes concrete gutters.<sup>4</sup> Includes patching first with stone and binder.

TABLE 2. — SUMMARY OF COST OF ROAD REPAIRS AND MAINTENANCE, 1911 — *Concluded.*

PARKWAY OR RESERVATION.	COST PER SQUARE YARD IN DETAIL.										Total Amount.	Remarks.	Location.	
	Length (Feet).	Width of Roadway (Feet).	Square Yards.	BITUMINOUS BINDER OR DUST LAYER.										
				Labor (Cents).	Gravel (Cents).	Broken Stone (Cents).	Sand (Cents).	Kind of Material.	Gallons per Square Yard.	Cost (Cents).				Cost of Apply- ing (Cents).
Middlesex Fells Reser- vation.	1,000	19	2,110	-	3.6	-	-	Asphaltic oil (Indian Refining Com- pany).	0.28	1.6	0.7	5.90	Surface treatment,	New South Street, Stone- ham, North of Spot
Middlesex Fells Reser- vation.	2,000	19	4,220	7.5	12.1	-	-	Asphaltic oil (Indian Refining Com- pany).	0.28	1.6	1.2	22.40	Resurfacing,	Main Street, Stoneham, Chandler Road to Bear Hill Road.
Middlesex Fells Reser- vation.	6,400	18	12,800	-	-	-	1.5	Asphaltic oil (Indian Refining Com- pany).	0.17	1.0	0.3	2.80	Surface treatment,	Pond Street and Woodland Road, Stoneham, New South Street to Sani- tarium Path.
Middlesex Fells Reser- vation.	2,300	18	4,600	-	-	-	2.7	Asphaltic oil (Indian Refining Com- pany).	0.30	1.7	0.5	4.90	Surface treatment,	Woodland Road, Stoneham, Sanitarium Path to Med- ford line.
Middlesex Fells Reser- vation.	1,600	18	3,200	-	-	-	4.1	Asphaltic oil, .	0.38	2.0	0.6	6.70	Surface treatment,	South Street, Stoneham.
Middlesex Fells Reser- vation.	2,200	18	4,400	-	-	-	5.4	Asphaltic oil, .	0.55	3.0	1.1	9.50	Surface treatment,	Emerson Street, Border Road, Stoneham.
Mystic Valley Parkway,	2,400	36	20,000	0.4	-	-	0.9	Asphaltic oil (Stand- ard Oil Com- pany).	0.31	1.4	0.9	3.60	Surface treatment,	{ Southerly from Main Street, Winchester. Northerly from High Street, West Medford.
Mystic Valley Parkway,	2,600	36												
Mystic Valley Parkway,	1,050	36	4,200	122.0	-	27.3	-	Standard asphalt Binder.	0.61	6.1	-	55.40	Reconstruction,	Aberjona River Bridge to Bacon Street, Winches- ter.
Mystic Valley Parkway,	1,900	36	7,600	0.6	-	4.9	-	Standard asphalt binder.	0.47	4.7	-	10.20	Surface treatment,	Easterly from Main Street, Winchester.
Mystic Valley Parkway,	500	34	1,890	3.9	13.0	-	2.5	Asphaltic oil (Stand- ard Oil Com- pany).	0.87	4.8	2.6	26.80	Resurfacing,	Easterly end of Parkway.

	1,170	50	6,500	1.9	—	1.7	—	Tarite-asphalt,	0.38	3.2	—	6.80	438 65	Surface treatment,	Traffic Road to Washington Street, north side.
Nahant Beach Parkway.	3,760	40	16,711	1.0	3.5	—	—	—	—	—	—	4.50	755 25	Resurfacing,	Entire length, Hull.
Nantasket Beach Reservation.	2,750	26	7,944	2.8	—	—	—	Asphaltic oil (the Texas Company).	0.31	1.9	—	4.70	380 00	Surface treatment,	Brush Hill Road to Blue Hill Avenue, Milton.
Neponset River Parkway.	8,000	24	21,330	0.2	—	—	—	Calcium chloride,	—	1.2	—	1.40	307 65	Surface treatment,	Squantum Street to National Quinoy Shore Reservation.
Quincy Shore Reservation.	3,800	40	16,900	1.5	—	—	—	Ugite No. 1 (United Gas Imp. Company).	0.47	2.8	—	4.30	730 56	Surface treatment,	Sailors Home, Quincy.
Quincy Shore Reservation.	2,800	26 and 36	12,000	2.0	—	1.5	—	Tarvia, . . .	0.34	2.8	—	6.30	759 75	Surface treatment,	Atlantic Street to Squantum Street, Quincy.
Revere Beach Parkway,	1,530	36	6,120	2.6	—	1.5	—	Tarvia, . . .	0.39	3.3	—	7.40	454 67	Surface treatment,	Charles Eliot Circle to Brodine's Corner.
Revere Beach Parkway,	2,900	36	10,900	1.3	—	4.0	—	Tarvia, . . .	0.35	2.8	—	8.10	881 07	Surface treatment,	Brodine's Corner to Stowers Court.
Revere Beach Parkway,	1,100	36	4,400	3.1	—	3.1	—	Tarite-asphalt,	0.32	2.5	—	8.70	382 88	Surface treatment,	Harris Street to Broadway, Revere.
Revere Beach Parkway,	3,300	26	9,533	1.0	—	1.8	—	Tarite-asphalt,	0.33	2.8	—	5.60	535 59	Surface treatment,	Washington Avenue to County Road.
Revere Beach Reservation.	1,800	40	6,800	2.9	—	1.5	—	Tarite-asphalt,	0.32	2.5	—	6.90	468 02	Surface treatment,	Everett Avenue to Second Street.
Revere Beach Reservation.	2,200	40	8,310	1.5	—	1.2	—	Tarite-asphalt,	0.31	2.4	—	5.10	422 78	Surface treatment,	Charles Eliot Circle to Shirley Street.
Revere Beach Reservation.	1,200	40	4,530	3.4	—	2.6	—	Tarvia, . . .	0.13	1.1	—	7.10	323 21	Surface treatment,	Chester Avenue to Revere Street.
Stony Brook Reservation.	13,075	16	23,247	0.95	—	—	—	Asphaltic oil (Standard Oil Company).	0.43	2.0	—	2.95	683 71	Surface treatment,	Revere Street to 1,200 feet north.

<sup>1</sup> Carting away old material and preparing subgrade.<sup>2</sup> Includes concrete gutters.<sup>3</sup> Includes patching first with stone and binder.

## FINANCIAL STATEMENT.

DEC. 1, 1910, TO DEC. 1, 1911.

Metropolitan Parks Loan Fund, . . . . .	\$8,900,000 00
Receipts added to loan before June 1, 1901, . . . . .	198,334 01
	<hr/>
	\$9,098,334 01

*Expenditures.*

Blue Hills Reservation:—	
Land, . . . . .	\$57 15
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	\$57 15
Charles River Reservation:—	
Land, . . . . .	\$100 00
Landscape Architects:—	
Services, . . . . .	\$68 66
Expenses, . . . . .	24
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	68 90
Land experts, . . . . .	15 00
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	183 90
Neponset River Reservation:—	
Landscape Architects, services, . . . . .	\$30 00
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	30 00
Mystic River Reservation:—	
Construction, labor and materials, . . . . .	\$247 75
Austin Engineering Co. case:—	
Amount of judgments, . . . . .	\$14,000 00
Report of hearings, . . . . .	84 94
Witnesses' expenses, . . . . .	42 80
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	14,127 74
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	14,375 49
Alewife Brook Purification:—	
Construction:—	
Contract, Eastern Dredging Co., . . . . .	\$10,125 91
Labor and materials, . . . . .	394 85
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	\$10,520 76
Engineering:—	
Pay rolls, . . . . .	\$202 65
Expenses, . . . . .	123 20
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	325 85
Advertising contracts, . . . . .	113 03
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	10,959 64
General expense:—	
Engineering, pay rolls, . . . . .	\$312 40
Legal, . . . . .	234 00
Claims, . . . . .	50 00
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	596 40
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	\$26,202 58
Amounts charged to Dec. 1, 1910, . . . . .	8,982,612 85
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	9,008,815 43
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Balance, . . . . .	\$89,518 58



## METROPOLITAN PARKS LOAN FUND, SERIES II.

Metropolitan Parks Loan Fund, Series II, . . . . .	\$5,135,000 00
Receipts added to loan before June 1, 1901, . . . . .	29,907 41

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\$5,164,907 41

*Expenditures.*

Middlesex Fells Parkway:—	
Land, . . . . .	\$6,268 21
Land experts, . . . . .	510 00
	<hr/>
	\$6,778 21
Mystic Valley Parkway:—	
Engineering, expenses, . . . . .	\$0 80
Winchester Fund:—	
Drinking fountain, . . . . .	\$25 00
Construction of granolithic side-walk, . . . . .	73 37
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	98 37
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	99 17
Lynn Fells Parkway:—	
Land, . . . . .	\$400 00
Construction:—	
Contract, Rowe Contracting Co., . . . . .	\$10,784 29
Labor and materials, . . . . .	312 33
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	11,096 62
Engineering:—	
Pay rolls, . . . . .	\$1,461 11
Expenses, . . . . .	138 79
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	1,599 90
Contribution to city of Melrose for cost of laying sewer, . . . . .	800 00
Advertising contracts, . . . . .	131 04
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	14,027 56
Winthrop Parkway:—	
Land, . . . . .	\$4,900 00
Construction, labor and materials, . . . . .	8,087 77
Engineering:—	
Pay rolls, . . . . .	\$617 44
Expenses, . . . . .	51 25
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	668 69
Land experts, . . . . .	105 00
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	13,761 46
Alewife Brook Parkway:—	
Land, . . . . .	\$19,910 17
Construction:—	
Contract, Lawler Brothers, . . . . .	\$973 00
Labor and materials, . . . . .	151 90
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	1,124 90
Engineering:—	
Pay rolls, . . . . .	\$47 15
Expenses, . . . . .	11 35
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	58 50
Land experts, . . . . .	495 00
Claims, . . . . .	12 00
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	21,600 57
General expense:—	
Engineering, pay rolls, . . . . .	\$55 00
Claims, . . . . .	50 00
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	105 00
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	\$56,371 97
Amounts charged to Dec. 1, 1910, . . . . .	5,093,591 70
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	5,149,963 67
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Balance, . . . . .	\$14,943 74

## CHARLES RIVER BASIN LOAN.

Total amount of bonds, . . . . .	\$4,425,000 00
Receipts added to loan, . . . . .	9,340 75
	<hr/>
	\$4,434,340 75

*Expenditures.*

Administration: —	
Clerks and stenographers, . . . . .	\$1,042 88
Stationery and printing, . . . . .	297 25
Miscellaneous expenses, . . . . .	4 84
	<hr/>
	\$1,344 97
Engineering: —	
Engineering assistants, . . . . .	\$469 06
Consulting engineers, . . . . .	365 55
Architects, . . . . .	175 00
Traveling, . . . . .	2 45
Instruments, tools and boats, . . . . .	78 00
Engineering and drafting supplies, . . . . .	4 94
Telephone, lighting, etc., sub-offices, . . . . .	18 60
Unclassified supplies, . . . . .	12 75
Miscellaneous expenses, . . . . .	11 75
	<hr/>
	1,138 10
Real Estate: —	
Legal and expert, . . . . .	\$5,855 60
	<hr/>
	5,855 60
Construction — Contracts: —	
Contract No. 66, Cutler-Hammer Mfg. Co., . . . . .	\$443 70
Contract No. 138, Lawler Brothers, . . . . .	7,427 64
Contract No. 139, James H. Fannon, . . . . .	1,767 60
Contract No. 140, Samuel J. Kelley, Jr., . . . . .	875 84
Contract No. 142, Lowe-Armington Co., . . . . .	4,204 06
Two open launches, George Lawley & Son Corporation, . . . . .	1,465 00
One 36-foot cabin launch, George Lawley & Son Corporation, . . . . .	1,175 00
Two patrol booths, S. D. Hicks & Son, . . . . .	1,385 00
Furnishing tow boats, ice-breaking, Jeremiah P. O'Riordan, . . . . .	3,235 23
	<hr/>
	21,979 07
Construction — preliminary: —	
Advertising, . . . . .	\$1,271 33
Professional services, . . . . .	65 00
	<hr/>
	1,336 33
Construction: — Additional: —	
Labor, . . . . .	\$2,790 95
Professional services, . . . . .	2,078 00
Freight and express, . . . . .	4 54
Jobbing and repairing, . . . . .	504 23
Tools, machinery, appliances and hardware supplies, . . . . .	2,227 65
Castings, iron work and metals, . . . . .	566 03
Pipe and valves, . . . . .	185 04
Paint and coating, . . . . .	174 61
Lumber and field buildings, . . . . .	67 34
Brick, cement and stone, . . . . .	636 84
Sand, gravel and filling, . . . . .	22 65
Furniture, . . . . .	106 00
Boat fittings, . . . . .	438 92
Life boats, . . . . .	235 22
Settees, . . . . .	167 40
	<hr/>

*Amounts carried forward, . . . . .* \$10,205 42 \$31,654 07 \$4,434,340 75

<i>Amounts brought forward,</i>	\$10,205 42	\$31,654 07	\$4,434,340 75
Fertilizer, . . . . .	165 00		
Screens, . . . . .	110 00		
Scow, . . . . .	80 00		
Anchorage pennants, . . . . .	58 33		
Unclassified supplies, . . . . .	126 17		
Telephone, lighting and power, . . . . .	230 00		
Miscellaneous, . . . . .	128 76		
		11,103 68	
Maintenance: —			
General expense: —			
Salaries, engineering department, . . . . .	\$58 74		
Office, . . . . .	50 13		
Traveling, . . . . .	95		
Stationery and printing, . . . . .	15 00		
Maps and books, . . . . .	37 93		
Engineering supplies, . . . . .	14 05		
Miscellaneous, . . . . .	83 18		
Labor, teaming and keep of horses: —			
Labor, . . . . .	24,755 16		
Teaming, . . . . .	137 50		
Keep of horses, . . . . .	753 06		
Horses, carriages, automobiles, etc., . . . . .	340 64		
Police: —			
Pay rolls, . . . . .	15,999 56		
Miscellaneous, . . . . .	1,797 71		
Watering, . . . . .	194 25		
Lighting, . . . . .	2,924 35		
Power, . . . . .	588 64		
Supplies and miscellaneous: —			
Traveling, . . . . .	19 07		
General supplies, . . . . .	3,719 43		
Stationery and printing, . . . . .	91 38		
Telephones, . . . . .	325 14		
Repairs, . . . . .	241 80		
Lighting buildings, . . . . .	592 11		
Water rates, . . . . .	159 33		
Laundry, . . . . .	43 76		
Diving dress, . . . . .	42 00		
Advertising rules, . . . . .	32 29		
Miscellaneous, . . . . .	95 22		
		53,112 38	
		\$95,870 13	
Amounts charged to Dec. 1, 1910, . . . . .	4,123,046 41		4,218,916 54
Balance, . . . . .			\$215,424 21

## METROPOLITAN PARKS SYSTEM MAINTENANCE.

Appropriation Dec. 1, 1910, to Dec. 1, 1911, . . . . . \$345,597 96

*Expenditures.*

General expense: —			
Police: —			
Pay rolls, . . . . .	\$81,777 04		
Miscellaneous, . . . . .	4,185 38		
		\$85,962 42	
<i>Amounts carried forward,</i> . . . . .	\$85,962 42		\$345,597 96

<i>Amounts brought forward,</i>		\$85,962 42	\$345,597 96
Salaries:—			
Commissioners,	\$3,450 00		
General office,	7,782 44		
Engineering department,	8,020 98		
		19,253 42	
Mateer pension,		300 00	
Engineering supplies,		872 35	
Rent, lighting and care of offices,		3,006 50	
Telephones,		974 10	
Annual report, one-half,		798 03	
Stationery and printing,		717 65	
Postage, etc.,		275 84	
Maps and books,		204 54	
Traveling,		114 75	
Landscape Architects:—			
Services,	\$83 24		
Expenses,	6 45		
		89 69	
Automobile and motorcycle fees,		69 00	
One-fourth cost of document, showing statement of			
Metropolitan District debts,		52 08	
Electric fans,		45 90	
Recording papers,		45 29	
Typewriter (exchange),		41 09	
Installing and changing lights,		39 43	
Expense, International Municipal Congress Exhibit,		38 50	
Filing cabinets, cards, etc.,		36 88	
Shellacking floors,		36 69	
Rubber stamps,		36 45	
Office repairs,		34 71	
Newsboys' badges,		31 50	
Typewriter supplies,		30 55	
Premium on bond,		30 00	
Radiator,		28 66	
New coverings for awnings,		28 00	
Spring water,		27 20	
Towel supply,		20 37	
Extra clerical assistance,		20 00	
Office supplies,		18 39	
Storing awnings,		16 10	
Typewriter repairs,		15 00	
Hand bags,		9 75	
Express,		8 30	
Copy of report to Supreme Judicial Court,		7 75	
Mailing tubes,		7 50	
Gauze,		6 07	
Copy cloths,		4 50	
Disinfectant,		4 50	
Door check,		4 50	
Putting up shelves,		4 38	
Feather duster,		3 50	
Waste baskets,		3 00	
Photographs and slides,		2 60	
Thermometer,		1 50	
Newspapers,		1 20	
		\$113,380 13	
Blue Hills Reservation:—			
Labor,	\$26,092 67		
Teaming,	1,395 51		
<i>Amounts carried forward,</i>	\$27,488 18	\$113,380 13	\$345,597 96

<i>Amounts brought forward,</i>		\$27,438 18	\$113,380 13	\$345,597 96
Keep of horses,		3,160 46		
Horses, carriages, automobiles, etc.,		7,791 89		
		<hr/>	\$38,440 53	
Labor and supplies, gypsy and brown-tail moth work,			11,901 46	
General supplies,			3,127 49	
Pine seedlings,			1,429 76	
Street watering or its equivalent,			1,348 92	
Telephones,			273 05	
Electric service extension,			225 00	
Lighting offices,			166 76	
Water rates,			151 23	
Wire fence,			124 20	
Express and freight,			103 38	
Electrical fixtures, sanitary,			87 00	
Stationery and printing,			52 58	
Laundry,			33 00	
Desk,			23 00	
Repairs,			21 83	
Chairs,			9 37	
Canvas suits,			7 20	
Couch,			5 50	
Demurrage,			5 00	
Matrons' badges,			2 00	
Traveling,			1 55	
			<hr/>	57,539 81
Middlesex Fells Reservation: —				
Labor,		\$20,219 95		
Teaming,		2,764 00		
Keep of horses,		1,554 84		
Horses, carriages, automobiles, etc.,		1,283 54		
		<hr/>	\$25,822 33	
Labor and supplies, gypsy and brown-tail moth work,			39,785 86	
General supplies,			4,308 30	
Street watering or its equivalent,			3,498 10	
Street lighting,			1,588 32	
Installation of motor, Cradock Bridge,			372 90	
Lighting offices,			320 51	
Telephones,			243 53	
Fire extinguishers,			120 72	
Stationery and printing,			116 29	
Express,			83 32	
Sand,			68 00	
Traveling,			54 30	
Meter board,			48 00	
Water rates,			41 09	
Chair,			4 00	
Demurrage,			1 00	
			<hr/>	76,476 57
Revere Beach Reservation: —				
Labor,		\$14,326 69		
Teaming,		35 00		
Keep of horses,		464 56		
Horses, carriages, automobiles, etc.,		1,053 21		
		<hr/>	\$15,879 46	
Street lighting,			4,751 52	
Street watering or its equivalent,			2,556 74	
General supplies,			1,910 85	
			<hr/>	
<i>Amounts carried forward,</i>		\$25,098 57	\$247,396 51	\$345,597 96



<i>Amounts brought forward,</i>		\$25,098 57	\$247,396 51	\$345,597 96
Telephones,		371 72		
Drinking fountains,		222 25		
Lighting offices,		214 09		
Canvas curtains,		167 00		
Water rates,		126 17		
Express and freight,		120 64		
Stationery and printing,		120 10		
Traveling,		104 39		
Refrigerator,		75 00		
Analysis of coal,		57 00		
Repairs,		29 33		
Laundry,		17 49		
Testing hose,		1 20		
Demurrage,		1 00		
Subscription to "Detective,"		1 00		
Miscellaneous,		2 00		
			26,728 95	
Stony Brook Reservation: —				
Labor,	\$4,765 85			
Teaming,	849 63			
Keep of horses,	207 73			
Horses, carriages, automobiles, etc.,	3 25			
		\$5,826 46		
Labor and supplies, gypsy and brown-tail moth work,		1,577 00		
Street watering or its equivalent,		774 88		
Pine seedlings,		236 41		
General supplies,		93 78		
Telephones,		54 67		
Stationery and printing,		23 02		
Water rates,		13 00		
Fire extinguishers,		12 50		
Repairs,		4 65		
			8,616 37	
Beaver Brook Reservation: —				
Labor,	\$1,962 84			
Keep of horses,	96 04			
Horses, carriages, automobiles, etc.,	39 06			
		\$2,097 94		
Labor and supplies, gypsy and brown-tail moth work,		350 83		
General supplies,		239 16		
Cement steps,		125 00		
Repairs,		122 16		
Telephones,		50 00		
Water rates,		48 75		
Building wall,		40 00		
Dressing,		24 00		
Drinking fountains,		19 66		
Traveling,		8 00		
Examination of trees,		5 00		
Express,		3 01		
Stationery and printing,		2 45		
			3,135 96	
Charles River Reservation: —				
Riverside Section: —				
Labor,	\$4,872 75			
Teaming,	317 50			
Keep of horses,	3 50			
Horses, carriages, automobiles, etc.,	686 68			
		\$5,880 43		
<i>Amounts carried forward,</i>		\$5,880 43	\$285,877 79	\$345,597 96

Amounts brought forward, . . . . \$5,880 43 \$285,877 79 \$345,597 96

Landscape Architects: —

Services, . . . . .	\$46 60	
Expenses, . . . . .	1 29	
		47 89

Labor and supplies, gypsy and brown-tail moth work, . . . . .	4,112 25
General supplies, . . . . .	1,353 60
Bench lathe and attachments, . . . . .	394 95
Lighting offices, . . . . .	198 80
Telephones, . . . . .	112 82
Stationery and printing, . . . . .	68 06
Typewriter (exchange), . . . . .	66 75
Traveling, . . . . .	62 74
Water rates, . . . . .	59 84
Repairs, . . . . .	44 87
Connecting plumbing with sewer, . . . . .	35 00
Physicians' services, . . . . .	21 50
Express, . . . . .	16 49

12,475 99

Speedway Section: —

Labor, . . . . .	\$9,798 88
Teaming, . . . . .	1,787 50
Keep of horses, . . . . .	1,462 70
Horses, carriages, automobiles, etc., . . . . .	167 69

\$13,216 77

Landscape Architects, services, . . . . .	25 00
Street watering or its equivalent, . . . . .	2,998 07
Labor and supplies, gypsy and brown-tail moth work, . . . . .	2,499 91
Street lighting, . . . . .	2,359 56
General supplies, . . . . .	1,871 55
Loam, . . . . .	487 20
Repairs, . . . . .	131 45
Telephones, . . . . .	120 59
Lighting offices, . . . . .	103 77
Water rates, . . . . .	87 20
Traveling, . . . . .	61 22
Typewriter (exchange), . . . . .	36 75
Laundry, . . . . .	31 82
Express, . . . . .	30 55
Chairs, . . . . .	26 00
Stationery and printing, . . . . .	25 79
Physicians' services, . . . . .	25 00
Canvas suits, . . . . .	14 40
Sand, . . . . .	12 00
Wire fence, . . . . .	8 45

24,173 05

Neponset River Reservation: —

Labor, . . . . .	\$100 40
Landscape Architects, services, . . . . .	10 00
Labor and supplies, gypsy and brown-tail moth work, . . . . .	1,676 25
Wire fence, . . . . .	46 80
General supplies, . . . . .	39 29
Telephones, . . . . .	34 37
Water rates, . . . . .	7 00

1,914 11

Lynn Shore Reservation: —

Labor, . . . . .	\$2,599 74
Teaming, . . . . .	24 50
	\$2,624 24

Amounts carried forward, . . . . \$2,624 24 \$324,440 94 \$345,597 96

<i>Amounts brought forward,</i>		\$2,624 24	\$324,440 94	\$345,597 96
Street lighting,		2,463 96		
Street watering or its equivalent,		1,724 19		
Water pipe,		351 15		
General supplies,		196 90		
Drinking fountains,		26 35		
Water rates,		11 40		
Advertising rules,		7 72		
Freight,		2 70		
			7,408 61	
Quincy Shore Reservation: —				
Labor,	\$3,708 55			
Teaming,	331 50			
		\$4,040 05		
Street lighting,		1,596 00		
Street watering or its equivalent,		1,038 21		
General supplies,		459 12		
Granolithic curbing, steps and buttress,		242 50		
Crushed stone,		86 10		
Laying wires,		68 55		
Telephones,		51 42		
Lighting offices,		42 15		
Water rates,		42 15		
Shrubs,		40 00		
Borings,		20 50		
Mason work, sanitary,		13 37		
Express,		12 90		
Stationery and printing,		10 27		
Chairs,		6 75		
Mats,		4 25		
			7,774 29	
Winthrop Shore Reservation: —				
Labor,	\$1,416 92			
Teaming,	50 19			
Horses, carriages, automobiles, etc.,	1 50			
		\$1,468 61		
Street lighting,		615 96		
Paving blocks,		420 75		
Water pipe,		199 80		
Street watering or its equivalent,		113 43		
Boat cover,		16 00		
General supplies,		14 39		
Water rates,		10 05		
Fire extinguishers,		6 25		
			2,865 24	
				342,489 08
Balance,				\$3,108 88

## BAND CONCERTS.

Appropriation, . . . . . \$25,000 00

*Expenditures.*

Blue Hills Reservation: —			
Band,	\$1,438 50		
		\$1,438 50	
Middlesex Fells Division: —			
Band,	\$2,539 44		
Extra police,	45 00		
<i>Amounts carried forward,</i>	\$2,584 44	\$1,438 50	\$25,000 00

<i>Amounts brought forward,</i>	\$2,584 44	\$1,438 50	\$25,000 00
Setting up and storing band stand and chairs, . . . . .	20 00		
Lighting band stand, . . . . .	17 00		
Chairs, . . . . .	12 00		
	<hr/>	2,633 44	
Revere Beach Reservation: —			
Band, . . . . .	\$6,817 90		
Lighting band stand, . . . . .	75 83		
Chairs, . . . . .	30 00		
	<hr/>	6,923 73	
Beaver Brook Reservation: —			
Band, . . . . .	\$330 00		
	<hr/>	330 00	
Charles River Reservation, Riverside Division: —			
Band, . . . . .	\$1,233 00		
	<hr/>	1,233 00	
Charles River Reservation, Speedway Division: —			
Band, . . . . .	\$1,773 50		
Extra police, . . . . .	210 00		
Lanterns, . . . . .	13 50		
	<hr/>	1,997 00	
Charles River Lower Basin: —			
Band, . . . . .	\$1,270 60		
Taking down and setting up band stand, . . . . .	128 78		
Portable band stand, . . . . .	113 00		
Lanterns, . . . . .	41 71		
Chairs, . . . . .	36 00		
Lumber, . . . . .	5 81		
Glass lights, . . . . .	3 50		
	<hr/>	1,599 40	
Nahant Beach Parkway: —			
Band, . . . . .	\$1,497 30		
Extra police, . . . . .	10 50		
	<hr/>	1,507 80	
Nantasket Beach Reservation: —			
Band, . . . . .	\$6,496 65		
Express on music, . . . . .	13 15		
	<hr/>	6,509 80	
General expense: —			
Printing band concert schedules, . . . . .	\$34 88		
	<hr/>	34 88	
		<hr/>	24,207 55
Balance, . . . . .			\$792 45

## SPECIAL APPROPRIATIONS.

Appropriation for storm repairs, . . . . . \$59,000 00

*Expenditures.*

Revere Beach Reservation: —

Construction: —

Contract, Warren Brothers Co., . . . . . \$219 01

Labor and materials, . . . . . 1,248 59

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\$1,467 60

Engineering: —

Pay rolls, . . . . . \$446 45

Expenses, . . . . . 22 33

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468 78

*Amounts carried forward,* . . . . . \$1,936 38

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\$59,000 00

Amounts brought forward, . . . . .	\$1,936 38		\$59,000 00
Pile driving, . . . . .	1,271 50		
Lumber, . . . . .	167 11		
Hardware, . . . . .	35 14		
Grass seed, . . . . .	30 80		
Fertilizer, . . . . .	25 35		
Freight, . . . . .	60		
		\$3,466 88	
Lynn Shore Reservation: —			
Labor, . . . . .	\$736 36		
Rental of cement gun, . . . . .	1,246 60		
Lime and cement, . . . . .	472 22		
Use of sand heater, . . . . .	10 50		
Transportation of air compressor, . . . . .	6 00		
		2,471 68	
Winthrop Shore Reservation: —			
Labor, . . . . .	\$330 70		
Engineering, pay rolls, . . . . .	64 80		
		395 50	
		\$6,334 06	
Expended, 1910, . . . . .		50,928 56	
			57,262 62
Balance, . . . . .			\$1,737 38
Appropriation for sanitariums, . . . . .			\$16,000 00

*Expenditures.*

Quincy Shore Reservation: —			
Contract, E. H. Sears, . . . . .	\$705 00		
Architects, . . . . .	137 00		
		\$842 00	
Expended, 1910, . . . . .		14,978 44	
			15,820 44
Balance, . . . . .			\$179 56
Appropriation for Bear Hill Tower, . . . . .			\$6,000 00

*Expenditures.*

Contract, Concrete Engineering Co., . . . . .	\$1,300 00		
Architects, . . . . .	100 00		
		\$1,400 00	
Expended, 1910, . . . . .		4,600 00	
			6,000 00
Balance, . . . . .			—
Appropriation for completion of Charles River Road in Watertown, . . . . .			\$10 000 00

*Expenditures.*

Contract, James H. Fannon, . . . . .	\$2,527 76		
Expended, 1910, . . . . .	7,469 30		
			9,997 06
Balance, . . . . .			\$2 94



Appropriation for additional dredging in Mystic River, . . . . . \$15,000 00

*Expenditures.*

Contract, Eastern Dredging Co., . . . . .	\$6,504 25		
Engineering: —			
Pay rolls, . . . . .	\$1,717 22		
Expenses, . . . . .	102 62		
		1,819 84	
Underpinning Harvard Avenue Bridge, . . . . .		636 42	
			\$8,960 51
Expended, 1910, . . . . .			479 63
			<hr/> 9,440 14
Balance, . . . . .			\$5,559 86
Appropriation for Haddock Pension, . . . . .			\$935 75
Expended, . . . . .			935 75
			<hr/> —
Balance, . . . . .			—
Appropriation for Apportionment Commission, . . . . .			\$10,683 28

*Expenditures.*

Commissioners: —			
Services, . . . . .	\$8,200 00		
Expenses, . . . . .	869 21		
		\$9 069 21	
Clerical assistance, . . . . .		1,570 00	
Printing reports, . . . . .		44 07	
			<hr/> 10,683 28
Balance, . . . . .			—
Appropriation for Boston and Watertown Parkway, . . . . .			\$200 00

*Expenditures.*

Printing: —			
Plans, . . . . .		\$4 33	
Reports, . . . . .		98 54	
			<hr/> 102 87
Balance, . . . . .			\$97 13
Appropriation for payment to Michael Murphy <i>et al.</i> for land, . . . . .			\$5,000 00
Expended, . . . . .			5,000 00
			<hr/> —
Balance, . . . . .			—
Appropriation for sidewalks, Middlesex Fells Parkway, . . . . .			\$5 000 00

*Expenditures.*

Construction: —			
Contract, Warren Brothers, Co., . . . . .	\$2,106 17		
Labor and materials, . . . . .	380 63		
		\$2,486 80	
Engineering, expenses, . . . . .		4 10	
			\$2,490 90
Expended, 1910, . . . . .			2,330 53
			<hr/> 4,821 43
Balance, . . . . .			\$178 57

## METROPOLITAN PARKS BOULEVARD MAINTENANCE.

Appropriation Dec. 1, 1910, to Dec. 1, 1911, . . . . . \$189,483 00

*Expenditures.*

## General expense: —

## Police: —

Pay rolls, . . . . .	\$28,259 26	
Miscellaneous, . . . . .	7,020 01	
	<hr/>	\$35,279 27

## Salaries: —

Commissioners, . . . . .	\$3,266 00	
General office, . . . . .	7,282 56	
Engineering department, . . . . .	8,091 02	
	<hr/>	18,639 58
Engineering supplies, . . . . .		887 24
Rent, lighting and care of offices, . . . . .		2,948 02
Annual report, one-half, . . . . .		798 02
Stationery and printing, . . . . .		757 63
Telephones, . . . . .		730 32
Steel plan case, . . . . .		640 00
Postage, etc., . . . . .		484 91
Building partitions, . . . . .		478 00
Extra clerical assistance, . . . . .		230 35
Maps and books, . . . . .		147 39
Filing cabinets, cards, etc., . . . . .		131 88
Automobile and motorcycle fees, . . . . .		98 50
Typewriters, . . . . .		94 25
Traveling, . . . . .		79 33
Premium on bond, . . . . .		40 00
Recording papers, . . . . .		37 06
Office repairs, . . . . .		28 07
Moving furniture, . . . . .		25 37
Express, . . . . .		23 75
Spring water, . . . . .		19 20
Ice, . . . . .		18 00

## Landscape Architects: —

Services, . . . . .	\$13 60	
Expenses, . . . . .	3 18	
	<hr/>	16 78
Towel supply, . . . . .		14 64
Chairs, . . . . .		12 45
Desk, . . . . .		10 00
Office supplies, . . . . .		8 85
Typewriter supplies, . . . . .		7 50
Soap, . . . . .		6 87
Clock, . . . . .		6 00
Lettering books, . . . . .		4 70
Lettering door, . . . . .		4 24
Rubber stamps, . . . . .		3 95
Typewriter repairs, . . . . .		3 33
Rug, . . . . .		2 75
Rebinding books, . . . . .		1 60
Photograph, . . . . .		50
	<hr/>	\$62,720 30

## Blue Hills Parkway: —

Labor, . . . . .	\$2,102 50
Teaming, . . . . .	125 50
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Amounts carried forward, . . . . .	\$2,228 00	\$62,720 30	\$189,483 00
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<i>Amounts brought forward,</i>	\$2,228 00	\$62,720 30	\$189,483 00
Keep of horses,	938 70		
Horses, carriages, automobiles, etc.,	1,993 48		
		\$5,160 18	
Street lighting,		2,274 96	
Street watering or its equivalent,		1,666 74	
General supplies,		477 86	
Labor and supplies, gypsy and brown-tail moth work,		319 00	
Crushed stone,		26 20	
Water rates,		14 16	
Lighting offices,		10 49	
Stationery and printing,		6 26	
Cleaning cesspool,		2 81	
			9,958 66
Middlesex Fells Parkway: —			
Labor,	\$9,683 74		
Teaming,	2,990 00		
Keep of horses,	3 00		
Horses, carriages, automobiles, etc.,	1,056 97		
		\$13,733 71	
Watering or its equivalent,		7,288 79	
Street lighting,		6,570 00	
General supplies,		757 81	
Loam,		633 15	
Trees,		500 00	
Labor and supplies, gypsy and brown-tail moth work,		248 94	
Telephones,		66 70	
Crushed stone,		25 32	
Water rates,		12 60	
Lighting offices,		12 00	
			29,849 02
Mystic Valley Parkway: —			
Labor,	\$9,763 67		
Teaming,	1,333 64		
Keep of horses,	101 00		
Horses, carriages, automobiles, etc.,	1,268 15		
		12,466 46	
Street watering or its equivalent,		4,965 50	
Street lighting,		4,470 00	
Labor and supplies, gypsy and brown-tail moth work,		999 96	
General supplies,		805 24	
Trees,		692 25	
Installing lights, Cradock Bridge,		388 24	
Power for sluice-gates,		250 00	
Telephones,		155 01	
Water rates,		45 45	
Stationery and printing,		29 78	
Shrubs,		23 75	
Express,		1 00	
			25,292 64
Revere Beach Parkway: —			
Labor,	\$8,799 00		
Teaming,	85 57		
Keep of horses,	327 59		
Horses, carriages, automobiles, etc.,	6,849 34		
		\$16,061 50	
Street lighting,		5,040 00	
Street watering or its equivalent,		4,591 89	
<i>Amounts carried forward,</i>	\$25,693 39	\$127,820 62	\$189,483 00

<i>Amounts brought forward,</i>		\$25,693 39	\$127,820 62	\$189,483 00
Crushed stone, . . . . .		932 75		
General supplies, . . . . .		917 07		
Labor and supplies, gypsy and brown-tail moth work, . . . . .		315 65		
Stone dust, . . . . .		59 95		
Water rates, . . . . .		29 00		
Telephones, . . . . .		19 16		
Fertilizer, . . . . .		12 81		
Canvas suits, . . . . .		9 46		
			27,989 24	
Neponset River Parkway: —				
Labor, . . . . .	\$761 10			
Street watering or its equivalent, . . . . .	260 00			
General supplies, . . . . .	5 50			
			1,026 60	
Nahant Beach Parkway: —				
Labor, . . . . .	\$3,389 14			
Keep of horses, . . . . .	106 23			
Horses, carriages, automobiles, etc., . . . . .	5 00			
		\$3,500 37		
Street lighting, . . . . .	876 07			
Street watering or its equivalent, . . . . .	640 83			
General supplies, . . . . .	171 18			
Canvas covers for shelters, . . . . .	132 00			
Crushed stone, . . . . .	126 26			
Cinders, . . . . .	4 80			
Demurrage, . . . . .	1 25			
			5,452 76	
Fresh Pond Parkway: —				
Labor, . . . . .	\$955 91			
Teaming, . . . . .	40 00			
		\$995 91		
Street watering or its equivalent, . . . . .	499 36			
Street lighting, . . . . .	450 00			
Labor and supplies, gypsy and brown-tail moth work, . . . . .	299 84			
General supplies, . . . . .	246 87			
Fertilizer, . . . . .	100 00			
			2,591 98	
Furnace Brook Parkway: —				
Labor, . . . . .	\$1,186 50			
Teaming, . . . . .	12 00			
		\$1,198 50		
Street lighting, . . . . .	1,225 56			
Street watering or its equivalent, . . . . .	1,106 03			
Labor and supplies, gypsy and brown-tail moth work, . . . . .	184 88			
General supplies, . . . . .	47 03			
Trees, . . . . .	31 10			
Lighting offices, . . . . .	12 00			
Repairs, . . . . .	9 35			
			3,814 45	
Winthrop Parkway: —				
Labor, . . . . .	\$545 64			
Teaming, . . . . .	22 00			
		\$567 64		
Street lighting, . . . . .	150 00			
General supplies, . . . . .	16 11			
			733 75	
<i>Amounts carried forward,</i>			\$169,429 40	\$189,483 00

<i>Amounts brought forward,</i>		\$169,429 40	\$189,483 00
Lynnway: —			
Labor,	\$4,838 17		
Horses, carriages, automobiles, etc.,	2 85		
		\$4,841 02	
Street lighting,		840 00	
Street watering or its equivalent,		64 13	
General supplies,		43 48	
			5,788 63
Lynn Fells Parkway: —			
Labor,	\$1,459 16		
Teaming,	125 00		
Horses, carriages, automobiles, etc.,	1 20		
		\$1,585 36	
Street watering or its equivalent,		981 32	
Street lighting,		957 18	
Sand,		162 00	
Labor and supplies, gypsy and brown-tail moth work,		49 49	
General supplies,		12 13	
			3,747 48
			178,965 51
Balance,			\$10,517 49

## CHARLES RIVER BASIN MAINTENANCE.

*Maintenance of Park and Water Areas.*

Appropriation, Dec. 1, 1910, to Dec. 1, 1911,	\$63,850 00
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*Expenditures.*

Labor,	\$7,155 83	
Teaming,	27 00	
Keep of horses,	764 71	
Horses, carriages, automobiles, etc.,	548 53	
		\$8,496 07
Police: —		
Pay rolls,	\$13,914 25	
Miscellaneous,	1,824 13	
		15,738 38
Contracts: —		
Coleman Brothers,	\$7,622 25	
B. R. Coullahan & Co.,	423 14	
James H. Fannon,	4,098 71	
		12,144 10
Street lighting,		2,216 92
General supplies,		2,124 16
Shrubs,		861 98
Fertilizer,		855 00
Settees,		625 00
Shelters,		611 39
Street watering or its equivalent,		356 10
Water rates,		218 75
Drinking fountains,		175 00
Telephones,		109 81
Covering heater and pipes,		73 00
Boat,		66 00
Repairs,		65 90
<i>Amounts carried forward,</i>	\$44,737 56	\$63,850 00



<i>Amounts brought forward,</i>	\$44,737 56	\$63,850 00
Life boat sled, . . . . .	60 00	
Chairs, . . . . .	52 00	
Stationery and printing, . . . . .	51 40	
Davits, . . . . .	50 00	
Lighting offices, . . . . .	38 47	
Iron posts, . . . . .	38 00	
Rental of land, . . . . .	35 00	
New covering for awning, . . . . .	21 60	
Traveling, . . . . .	13 45	
Express, . . . . .	7 58	
Corrugated matting, . . . . .	6 70	
Sand, . . . . .	6 67	
Cabinet, . . . . .	5 00	
Crushed stone, . . . . .	5 00	
Advertising rules, . . . . .	2 50	
	<hr/>	45,130 93
Balance, . . . . .		\$18,719 07

*Maintenance and Operation of Locks, Gates and Drawbridges.*

Appropriation Dec. 1, 1910, to Dec. 1, 1911, . . . . . \$28,125 00

*Expenditures.*

Labor, pay rolls, . . . . .	\$12,647 21	
General supplies, . . . . .	1,512 93	
Lighting offices, . . . . .	806 28	
Power, . . . . .	257 64	
Advertising, . . . . .	235 66	
Repairs to machinery, . . . . .	229 16	
Water rates, . . . . .	85 70	
Telephones, . . . . .	85 37	
Stationery and printing, . . . . .	23 46	
Boiler inspection, . . . . .	10 00	
Laundry, . . . . .	7 07	
Crushed stone, . . . . .	4 88	
Express, . . . . .	1 90	
Sealing weights, . . . . .	1 80	
Traveling, . . . . .	65	
Demurrage, . . . . .	25	
	<hr/>	15,909 96
Balance, . . . . .		\$12,215 04

**NANTASKET BEACH MAINTENANCE.**

Appropriation Dec. 1, 1910, to Dec. 1, 1911, . . . . . \$26,500 00

*Expenditures.*

Labor, . . . . .	\$5,505 24	
Teaming, . . . . .	51 00	
Keep of horses, . . . . .	342 20	
Horses, carriages, automobiles, etc., . . . . .	95 47	
	<hr/>	\$5,993 91
Police: —		
Pay rolls, . . . . .	\$12,938 34	
Miscellaneous, . . . . .	2,244 95	
	<hr/>	15,183 29
<i>Amounts carried forward,</i>	\$21,177 20	\$26,500 00

<i>Amounts brought forward,</i>	\$21,177 20	\$26,500 00
Street lighting,	1,129 77	
General supplies,	834 86	
Street watering or its equivalent,	626 41	
Gravel,	593 75	
Rent, superintendent's house,	385 00	
Water rates,	350 50	
Repairs,	219 04	
Telephones,	166 48	
Stone dust,	116 71	
Traveling,	83 07	
Drinking fountains,	76 37	
Express,	61 48	
Autoplane system,	50 00	
Analysis of coal,	36 00	
Stationery and printing,	35 51	
Shrubs,	31 65	
Changing clock location,	26 50	
Newspapers,	11 67	
Physicians' services,	11 00	
Cleaning cesspool,	10 00	
Drain pipe rental,	6 00	
Advertising,	2 08	
Photographs,	2 00	
Post-office box,	1 40	
Demurrage,	1 00	
		26,045 45
Balance,		\$454 55

## WELLINGTON BRIDGE MAINTENANCE.

Appropriation Dec. 1, 1910, to Dec. 1, 1911, . . . . . \$6,512 00

*Expenditures.*

Labor,	\$3,158 12	
Teaming,	207 25	
		\$3,365 37
Street lighting,	900 00	
Float stage and run,	399 79	
General supplies,	286 06	
Loam,	121 50	
Street watering or its equivalent,	61 55	
Telephones,	49 23	
Sand,	18 00	
Water rates,	14 52	
Stationery and printing,	3 73	
		5,219 75
Balance,		\$1,292 25

## METROPOLITAN PARKS EXPENSE FUND.

*Receipts Dec. 1, 1910, to Dec. 1, 1911.*

Bath-houses: —

Revere Beach Bath-house,	\$37,717 65	
Revere Beach Emergency Tent,	205 55	
		\$37,923 20

*Amount carried forward,* . . . . . \$37,923 20

Amount brought forward,		\$37,923 20	
Bath-houses — <i>Con.</i>			
Nantasket Beach Bath-house,	\$11,187 40		
Nantasket Beach Emergency Tent,	11 00		
		11,198 40	
Nahant Beach Bath-house,		8,123 70	
			\$57,245 30
Rentals: —			
Buildings,	\$10,100 00		
Houses,	2,035 25		
Roller-coaster and merry-go-round,	2,000 00		
Street railway locations,	1,813 74		
Boat-house sites,	1,099 00		
Ducts,	903 44		
Lunch stands and refectories,	871 30		
Land,	475 00		
Boats,	396 59		
Pastures,	384 00		
Photographic stand,	250 00		
Automobile stand,	25 00		
			20,353 32
Sales: —			
Wood,	\$2,170 00		
Land,	1,050 00		
Transits,	827 00		
Motorcycles and parts,	390 00		
Grass,	301 00		
Sheep and lambs,	200 00		
Old metal, rubber, paper, lumber, etc.,	174 81		
Typewriter,	130 10		
Drawing tables,	115 00		
Furniture,	109 78		
Posts,	88 78		
Crushed stone,	72 52		
Sanitary napkins,	62 90		
Barrels,	58 15		
Hay and oats,	50 24		
Wool,	44 40		
Turnips,	27 00		
Building,	20 00		
Planimeters,	20 00		
Portable lunch stand,	20 00		
Old rowboats,	10 00		
Old bathing suits and hose,	8 15		
Bag,	5 00		
Horse (to be destroyed),	2 00		
Old dump cart,	2 00		
		5,958 83	
Court fines,		5,335 00	
City of Medford, for changes in Auburn Street,		3,648 66	
Income from money invested,		3,028 26	
Sidewalk contributions,		495 61	
Part cost of resurfacing sidewalk (Citizens' Gas Light Co.),		300 00	
Unredeemed bathing checks,		222 10	
Horses' board,		78 00	
Damages to boat, pipe and fence,		35 41	
Telephone tolls,		34 21	
Repairs on trench,		29 30	
Credits for goods returned,		21 89	
Licenses to sell papers,		20 00	
Burro privilege,		15 00	
Amount carried forward,			\$96,820 89

<i>Amount brought forward,</i>		\$96,820 89
Lost keys and valuable checks,		9 00
Permit to keep spars at Cottage Farms,		5 00
Refunds on express and freight,		4 57
Total,		<u>\$96,839 46</u>

## METROPOLITAN PARKS EXPENSE FUND.

Balance, Dec. 1, 1910,	\$96,317 55
Receipts, Dec. 1, 1910, to Dec. 1, 1911,	<u>96,839 46</u>
	\$193,157 01

*Expenditures.*

## Police:—

Police signal system,	\$2,462 63	
Motorcycles,	2,092 10	
Motorcycle parts and repairs,	1,700 33	
Rent, armory and shooting gallery,	163 00	
Emergency lectures for police,	114 60	
Services of drill master,	90 00	
Advertising rules,	40 85	
Physicians' services,	25 00	
Analysis of oils,	22 50	
Naphtha,	18 75	
Bed linen for dormitory,	17 18	
	<u></u>	\$6,746 94

## Engineering:—

Telephones,	\$0 15	
	<u></u>	15

## Blue Hills Reservation:—

Sanitary,	\$2,879 69	
Electric light service line to stable,	250 00	
Water rates,	47 06	
Fire protection inspection,	18 00	
	<u></u>	3,194 75

## Middlesex Fells Reservation:—

Grading at headquarters,	\$981 50	
Rent, superintendent's house,	432 00	
Buildings,	329 05	

## Architects:—

Bear Hill Tower,	\$100 00	
New office building,	150 00	
	<u></u>	250 00
Uprights, braces and brass rail, Bear Hill Tower,	210 00	
Cement seats,	105 27	
Repairs to buildings,	97 55	
Drinking fountain,	24 00	
Fire protection inspection,	18 00	
Use of patent and name plates,	17 50	
Water rates,	17 00	
Labor on cesspool,	14 00	
	<u></u>	2,495 87

## Revere Beach Reservation:—

## Bath-house:—

Pay rolls,	\$20,032 91	
Bathing suits,	4,347 13	
Lighting,	1,923 71	
Coal,	1,654 45	

<i>Amounts carried forward,</i>	\$27,958 20	\$12,437 71	\$193,157 01
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Amounts brought forward, . . . \$27,958 20

\$12,437 71      \$193,157 01

Bath house — *Con.*

Repairs, . . . . .	1,387 74
Towels, . . . . .	1,283 40
Stockings, . . . . .	1,025 03
Engine room, . . . . .	925 60
Water rates, . . . . .	394 39
Lumber, . . . . .	374 19
Hardware, . . . . .	361 74
Soap, . . . . .	331 18
Ice, . . . . .	258 45
Hose, . . . . .	229 50
Stationery, . . . . .	227 69

Inspection and report of New Jersey

bath-houses, . . . . .	150 00
Medicines and attendance, . . . . .	146 88
Toilet paper, . . . . .	125 23
Paint, . . . . .	117 57
Electric fans, . . . . .	116 10
Corrugated matting, . . . . .	110 03
Tickets, . . . . .	107 25
Bathing caps, . . . . .	106 00
Key bands, . . . . .	70 00
Findings, . . . . .	64 40
Drinking fountains, . . . . .	54 00
Shower fixtures, . . . . .	37 90
Brooms, . . . . .	37 38
Bathing checks, . . . . .	33 78
Settlement for money lost, . . . . .	32 00
Telephones, . . . . .	30 75
Baskets, . . . . .	30 72
Acids, . . . . .	26 40
Metal polish, . . . . .	26 20
Spring water, . . . . .	26 00
Soda, . . . . .	24 00
Oil, . . . . .	23 05
Disinfectant, . . . . .	22 95
Analysis of soap, . . . . .	20 00
Castors, . . . . .	19 20
Fire extinguishers, . . . . .	18 75
Chairs, . . . . .	18 00
Brushes, . . . . .	17 75
Settlement of claim for clothing, . . . . .	15 00
German silver snaps, . . . . .	13 88
Fire axes, . . . . .	13 70
Blankets, . . . . .	13 50
Mops, . . . . .	11 30
Hose fittings, . . . . .	11 05
Analysis of coal, . . . . .	11 00
Uniform, manager, . . . . .	10 56
Freight and express, . . . . .	10 46
Clock dials, . . . . .	10 00
Postage, . . . . .	9 50
Pans, . . . . .	8 90
Soap tank, . . . . .	8 75
Ammonia, . . . . .	7 14
Pails, . . . . .	6 75
Electrical supplies, . . . . .	6 65
Twine, . . . . .	6 58
Boat hooks, . . . . .	6 12
Enamel cloth, . . . . .	6 00

Amounts carried forward, . . . \$36,556 24

\$12,437 71      \$193,157 01



Amounts brought forward, . . . \$36,556 24 \$12,437 71 \$193,157 01

Bath house — *Con.*

Crash, . . . . .	5 70
Mending outfit, . . . . .	5 49
Fuses, . . . . .	4 51
Roofing paper, . . . . .	4 25
Valuable checks, . . . . .	4 07
Matches, . . . . .	3 90
Cans, . . . . .	3 80
Wringer, . . . . .	3 80
Dusters, . . . . .	3 65
Gas plate, . . . . .	3 25
Traveling, . . . . .	2 95
Oars, . . . . .	2 58
Dust pans, . . . . .	2 50
Starch, . . . . .	2 40
Cuspidors, . . . . .	2 25
Piping, . . . . .	1 50
Spoons, . . . . .	1 24
Batteries, . . . . .	1 08
Advertising, . . . . .	1 00
Miscellaneous, . . . . .	5 18
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	\$36,621 34

## Emergency Tent:—

Pay rolls, . . . . .	\$390 50
Tent, . . . . .	200 00
Lockers, . . . . .	177 51
Towels, . . . . .	136 60
Key bands, . . . . .	56 00
Lighting, . . . . .	55 00
Tickets, . . . . .	31 15
Repairs, . . . . .	25 85
Ash barrels, . . . . .	25 05
Bathing checks, . . . . .	20 00
Drilling, . . . . .	17 30
Pails, . . . . .	3 05
Hardware, . . . . .	3 00
Lumber, . . . . .	45
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	1,140 86

Fire protection inspection, . . . . . 18 00

37,780 20

## Stony Brook Reservation:—

Water rates, . . . . . \$64 00

64 00

## Beaver Brook Reservation. —

Fertilizer, . . . . . \$60 00

Fire protection inspection, . . . . . 4 00

64 00

## Charles River Reservation:—

## Riverside Section:—

Float, . . . . .	\$145 00
Sewer connection, . . . . .	140 46
Shingling barn, . . . . .	114 45
Water rates, . . . . .	40 00
Fire protection inspection, . . . . .	12 00
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451 91

## Speedway Section:—

Filling material, . . . . .	\$2,388 50
Extending box drain, . . . . .	60 29
Fire protection inspection, . . . . .	12 00
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2,460 79

Amounts carried forward, . . . . . \$53,258 61 \$193,157 01

<i>Amounts brought forward,</i>		\$53,258 61	\$193,157 01
Lower Basin: —			
Horse,	\$300 00	300 00	
Quincy Shore Reservation: —			
Teaming stone dust,	\$173 00		
Granolithic steps and curbing,	170 00		
Crushed stone,	94 90		
Manhole rounds,	69 00		
Refund to Citizens' Gas Light Co., on account of overpayment,	44 65		
Cement,	36 45		
Burlap bags,	28 00		
Bolts,	25 51		
Steel,	9 35		
Oakum,	1 28	652 14	
Blue Hills Parkway: —			
Granolithic sidewalks,	\$447 16		
One-third cost of sprayer,	158 33	605 49	
Middlesex Fells Parkway: —			
Buildings,	\$6,913 55		
One-third cost of sprayer,	158 33		
Shrubs,	73 50		
Drinking fountain,	26 00		
Tank wagon,	10 00		
Report of hearings,	5 00	7,186 38	
Mystic Valley Parkway: —			
Repairs to buildings,	\$75 33		
Water rates,	47 68	123 01	
Revere Beach Parkway: —			
Installation of electric motor, Malden River Bridge,	\$815 52	815 52	
Neponset River Parkway: —			
Building wall,	\$1,491 50		
Water rates,	6 00	1,497 50	
Nahant Beach Parkway: —			
Bath-house: —			
Pay rolls,	\$3,984 75		
Lighting,	290 74		
Towels,	242 34		
Stockings,	192 00		
Coal,	183 50		
Hose,	144 70		
Bathing caps,	108 00		
Telephones,	63 83		
Tickets,	46 75		
Medicines and attendance,	46 50		
Repairs,	45 40		
Flags,	39 64		
Water rates,	35 69		
Cleaning cesspool,	30 00		
Baskets,	29 00		
Key bands,	24 50		
Lumber,	23 75		
Hardware,	22 62		
Findings,	21 85		
<i>Amounts carried forward,</i>		\$5,575 56	\$64,438 65
			\$193,157 01

<i>Amounts brought forward,</i>	\$5,575 56	\$64,438 65	\$193,157 01
<b>Bath house — <i>Con.</i></b>			
Electric fan, . . . . .	19 25		
Ozone generator, . . . . .	15 00		
Stationery, . . . . .	14 80		
Fire extinguishers, . . . . .	12 50		
Ice, . . . . .	9 30		
Engine room, . . . . .	7 12		
Disinfectant, . . . . .	4 65		
Oil, . . . . .	4 50		
Stepladder, . . . . .	4 20		
Postage, . . . . .	4 00		
Soap, . . . . .	4 00		
Laundry, . . . . .	3 97		
Electrical fixtures, . . . . .	3 95		
Fire hooks, . . . . .	2 72		
Combs, . . . . .	2 40		
Fire axes, . . . . .	1 60		
Repairs to clock, . . . . .	1 10		
Express, . . . . .	1 00		
	<hr/>		
	\$5,691 62		
One-third cost of sprayer, . . . . .	158 34		
	<hr/>		
		5,849 96	
<b>Lynnway: —</b>			
Installation of electric motor, Saugus River Bridge, .	\$867 01		
	<hr/>		
		867 01	
<b>Nantasket Beach Reservation: —</b>			
<b>Bath-house: —</b>			
Pay rolls, . . . . .	\$6,063 68		
Bathing suits, . . . . .	1,094 92		
Coal, . . . . .	989 98		
Repairs, . . . . .	585 66		
Water rates, . . . . .	476 82		
Towels, . . . . .	270 00		
Stockings, . . . . .	248 50		
Lumber, . . . . .	125 75		
Paint, . . . . .	123 90		
Engine room, . . . . .	115 63		
Stationery, . . . . .	109 25		
Hauling bathing suits, . . . . .	100 00		
Lighting, . . . . .	93 29		
Medicines and attendance, . . . . .	56 55		
Ice, . . . . .	51 98		
Uniforms, . . . . .	46 08		
Toilet paper, . . . . .	42 40		
Tickets, . . . . .	41 50		
Soap, . . . . .	36 69		
Hose, . . . . .	34 43		
Corrugated matting, . . . . .	29 73		
Hardware, . . . . .	28 01		
Bathing caps, . . . . .	26 13		
Uniform (manager), . . . . .	25 56		
Sanitary napkins, . . . . .	24 00		
Findings, . . . . .	21 08		
Analysis of coal, . . . . .	20 00		
Crash, . . . . .	19 00		
Flags, . . . . .	12 82		
Traveling, . . . . .	11 00		
Key bands, . . . . .	10 50		
Water coolers, . . . . .	10 12		
Brooms, . . . . .	8 00		
	<hr/>		
<i>Amounts carried forward,</i>	\$10,952 96	\$71,155 62	\$193,157 01

<i>Amounts brought forward,</i>		\$10,952 96	\$71,155 62	\$193,157 01
Bath house — <i>Con.</i>				
Premium on bond,		8 00		
Metal polish,		7 70		
Stepladders,		5 75		
Gasoline,		5 00		
Electric stove,		4 75		
Acme sprayers,		3 78		
Pails,		2 85		
Twine,		2 64		
Employees' badges,		2 30		
Mat,		2 20		
Dust pans,		2 15		
Repairs to clock,		2 00		
Shears,		1 80		
Freight,		1 65		
Brooms,		1 35		
Scythe,		1 17		
Rubber stamp,		1 00		
Miscellaneous,		3 08		
			\$11,012 13	
Emergency Tent: —				
Towels,		\$72 85		
Carpentry,		64 17		
Key bands,		35 00		
Pay rolls,		31 00		
Paroid roofing,		27 63		
Tank,		20 35		
Bathing checks,		20 00		
Ticket cabinet,		18 75		
Drilling,		18 15		
Pipe fittings,		10 98		
Tickets,		5 55		
Toilet paper,		4 84		
Express,		4 05		
Hardware,		1 10		
Account book,		60		
			335 02	
Repairs and alterations in buildings,			4,999 60	
Washing machines, hotel,			1,117 50	
Beds, hotel,			605 00	
Pipe and valves,			271 42	
Shades,			122 66	
Report on electric wiring,			35 00	
Report on steam apportionment,			35 00	
Fire protection inspection,			18 00	
Door checks,			12 15	
			18,563 48	
				89,719 10
Balance,				\$103,437 91

## METROPOLITAN PARKS TRUST FUND.

Balance Dec. 1, 1911, . . . . . \$1,101 50

## SUMMARY OF GENERAL EXPENSE FOR YEAR ENDING NOV. 30, 1911.

	Parks System Maintenance.	Parks Boule- vard Maintenance.	Parks Ex- pense Fund.	Parks Loan Fund.	Parks Loan Fund Series II.	Total.
Commissioners, . . . . .	\$3,450 00	\$3,266 00	-	-	-	\$6,716 00
Office salaries, . . . . .	7,782 44	7,282 56	-	\$284 00	\$50 00	15,399 00
Engineering, . . . . .	8,020 98	8,091 02	\$0 15	312 40	55 00	16,479 55
Police, . . . . .	85,962 42	35,279 27	6,746 94	-	-	127,988 63
Rent Boston office, . . . . .	2,710 00	2,675 09	-	-	-	5,385 00
Light and care Boston office, . . . . .	296 48	273 00	-	-	-	569 48
Miscellaneous, . . . . .	5,157 81	5,853 45	-	-	-	11,011 26
	\$113,880 13	\$62,720 30	\$6,747 09	\$596 40	\$105 00	\$183,548 92



## SUMMARY OF EXPENDITURES FOR YEAR ENDING NOV. 30, 1911.

	Metropoli- tan Parks Loan Fund.	Metropoli- tan Parks Loan Fund, Series II.	Metropoli- tan Parks System Main- tenance.	Metropoli- tan Parks Boulevard Main- tenance.	Metropoli- tan Parks Expense Fund.	Special Appropri- ations, Re- pairs and Con- struction.	Band Concerts.	Totals.
Reservations: —								
Blue Hills, . . . . .	\$57 15	—	\$57,539 81	—	\$3,194 75	—	\$1,438 50	\$62,230 21
Beaver Brook, . . . . .	—	—	3,135 96	—	64 00	—	330 00	3,529 96
Charles River, Riverside, . . . . .	183 90	—	12,475 99	—	451 91	—	1,233 00	14,344 80
Charles River, Speedway, . . . . .	—	—	24,173 05	—	2,460 79	\$2,527 76 <sup>1</sup>	1,997 00	31,158 60
Lynn Shore, . . . . .	—	—	7,408 61	—	—	2,471 68 <sup>1</sup>	—	9,880 29
Middlesex Fells, . . . . .	—	—	76,476 57	—	2,495 87	1,400 00 <sup>1</sup>	2,633 44	83,005 88
Mystic River, . . . . .	14,375 49	—	—	—	—	8,960 51 <sup>1</sup>	—	23,336 00
Nantasket Beach, . . . . .	—	—	—	—	18,563 48	26,045 45 <sup>2</sup>	6,509 80	51,118 73
Neponset River, . . . . .	30 00	—	1,914 11	—	—	—	—	1,944 11
Quincy Shore, . . . . .	—	—	7,774 29	—	652 14	842 00 <sup>2</sup>	—	9,268 43
Revere Beach, . . . . .	—	—	26,728 95	—	37,780 20	3,466 88 <sup>1</sup>	6,923 73	74,899 76
Stony Brook, . . . . .	—	—	8,616 37	—	64 00	—	—	8,680 37
Winthrop Shore, . . . . .	—	—	2,865 24	—	—	395 50 <sup>1</sup>	—	3,260 74
General expense, . . . . .	596 40	—	113,330 13	—	—	935 75 <sup>4</sup> 10,683 28 <sup>5</sup>	34 88	125,630 44
Connection West Roxbury Parkway to Watertown Square, . . . . .	—	—	—	—	—	102 87	—	102 87
Totals, . . . . .	\$15,242 94	—	\$342,489 08	—	\$65,727 14	\$57,831 68	\$21,100 35	\$502,391 19

## Parkways: —

Alewite Brook,	.	.	.	.	.	.	.	.	.	\$21,600 57	-	-	-	-	-	\$32,560 21
Blue Hills,	.	.	.	.	.	.	.	.	.	-	-	\$9,958 66	\$605 49	-	-	10,564 15
Fresh Pond,	.	.	.	.	.	.	.	.	.	-	-	2,591 98	-	-	-	2,591 98
Furnace Brook,	.	.	.	.	.	.	.	.	.	-	-	3,814 45	-	-	-	3,814 45
Lynn Fells,	.	.	.	.	.	.	.	.	.	14,027 56	-	3,747 48	-	-	-	17,775 04
Lynnway,	.	.	.	.	.	.	.	.	.	-	-	5,788 63	807 01	-	-	6,655 64
Middlesex Fells,	.	.	.	.	.	.	.	.	.	6,778 21	-	29,849 02	7,186 38	-	-	46,304 51
Mystic Valley,	.	.	.	.	.	.	.	.	.	99 17	-	25,292 64	123 01	-	-	25,514 82
Nahant Beach,	.	.	.	.	.	.	.	.	.	-	-	5,452 76	5,849 96	\$1,507 80	-	12,810 52
Neponset River,	.	.	.	.	.	.	.	.	.	-	-	1,026 60	1,497 50	-	-	2,524 10
Revere Beach,	.	.	.	.	.	.	.	.	.	-	-	27,989 24	815 52	-	-	28,804 76
Winthrop,	.	.	.	.	.	.	.	.	.	13,761 46	-	733 75	-	-	-	14,495 21
General expenses,	.	.	.	.	.	.	.	.	.	105 00	-	62,720 30	6,747 09	-	-	69,572 39
Totals,	.	.	.	.	.	.	.	.	.	\$56,371 97	-	\$178,965 51	\$23,691 96	\$2,490 90	\$1,507 80	\$273,987 78
Wellington Bridge maintenance,	.	.	.	.	.	.	.	.	.	-	-	-	-	\$5,219 75	-	\$5,219 75
Charles River Basin,	.	.	.	.	.	.	.	.	.	-	-	-	\$300 00	-	\$1,599 40	1,899 40
Charles River Basin loan,	.	.	.	.	.	.	.	.	.	-	-	-	-	95,870 13	-	95,870 13
Charles River Basin maintenance,	.	.	.	.	.	.	.	.	.	-	-	-	-	61,040 89	-	61,040 89
Grand totals,	.	.	.	.	.	.	.	.	.	\$56,371 97	\$342,489 08	\$178,965 51	\$89,719 10	\$222,453 35	\$24,207 55	\$940,409 14

1 For storm repairs or outside construction.

2 Maintenance.

3 Sanitaries.

4 Haddock pension.

5 Apportionment commission.



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APPENDIX.

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## APPENDIX 1.

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### SPECIAL REPORT RELATIVE TO MAKING PARKER HILL IN THE CITY OF BOSTON A PART OF THE METROPOLITAN PARK SYSTEM, REQUIRED BY CHAPTER 48 OF THE RESOLVES OF 1911.

The Metropolitan Park Commission presents herewith a special report, with surveys and estimates of cost, as to the advisability of acquiring, as a part of the metropolitan park system, that part of Parker Hill in the city of Boston between Fisher Avenue, Parker Street, Parker Hill Avenue, Calumet Street and Iroquois Street to a point at or near Wait Street, and thence to said Fisher Avenue, as required by chapter 48 of the Resolves of the Legislature of 1911.

The resolve which requires this report is as follows:—

#### RESOLVES OF 1911, CHAPTER 48.

RESOLVE TO PROVIDE FOR AN INVESTIGATION AND REPORT BY THE METROPOLITAN PARK COMMISSION RELATIVE TO MAKING PARKER HILL IN THE CITY OF BOSTON A PART OF THE METROPOLITAN PARK SYSTEM.

*Resolved*, That the metropolitan park commission is hereby directed to make surveys and estimates as to the cost, and to consider the advisability of acquiring as a part of the metropolitan park system, that part of Parker Hill in the city of Boston between Fisher avenue, Parker street, Parker Hill avenue, Calumet street and Iroquois street to a point at or near Wait street, and thence to said Fisher avenue. The commission shall report to the next general court not later than the second Saturday in January.

*(The foregoing was laid before the Governor on the fourth day of April, 1911, and after five days it had "the force of a law", as prescribed by the Constitution, as it was not returned by him with his objections thereto within that time.)*

Parker Hill lies wholly within the city of Boston. It rises abruptly about 150 feet above the surrounding level land of the city between the Fens and Huntington Avenue and Rox-

bury Crossing, and attains a height of approximately 200 feet above sea level. It is of rounded form, well covered with soil, and still has upon it remnants of trees of considerable size, which indicate that it would readily lend itself to planting and support of the tree and shrub growth of a developed park. From its top there is a far distant view of the harbor and of all parts of the metropolitan district, and of many hills and mountain tops beyond. It is not one of the highest hills of the metropolitan district, but is of great interest from the fact that, while lying in the midst of a thickly settled part of the city, its top is largely unoccupied.

The map which accompanies this report is a compiled plan of the portion of the hill required to be considered and estimated upon by the resolve. It shows that the westerly portion, between Parker Hill and Fisher avenues, is occupied by Mellen Street for a short distance, and by a few private houses and by the buildings of the New England Baptist Hospital, and by the foundations of the buildings of the Robert B. Brigham Hospital, now in course of erection, and that most of the remaining land at this end of the hill appears to belong to the two hospitals. Adjoining and east of the land of the Brigham Hospital a large area is occupied by Parker Hill Reservoir of the city of Boston, which is used as a reserve reservoir. At the extreme easterly end a portion of the hill is occupied by Parker Hill schoolhouse. The few other buildings upon the land within the limits prescribed for this report are dwellings, of which the majority are three-flat houses of recent construction.

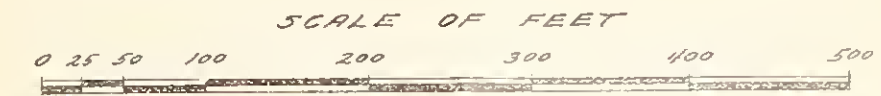
The resolve under which this report is made carries no appropriation, and, therefore, does not appear to contemplate the employment of special experts to prepare estimates of the values of the real estate within the limits prescribed for the report. The estimate of the cost of land which is included in this report is, therefore, based upon the assessed values as they appear upon the assessors' books of Boston, with an estimated value added for buildings which are not yet assessed.

After careful consideration of the matter the Board has omitted from its estimates the real estate occupied by the Parker Hill School, by Parker Hill Reservoir and by the two



Commonwealth of Massachusetts  
METROPOLITAN PARK COMMISSION  
MAP OF  
**PARKER HILL**  
IN THE CITY OF BOSTON

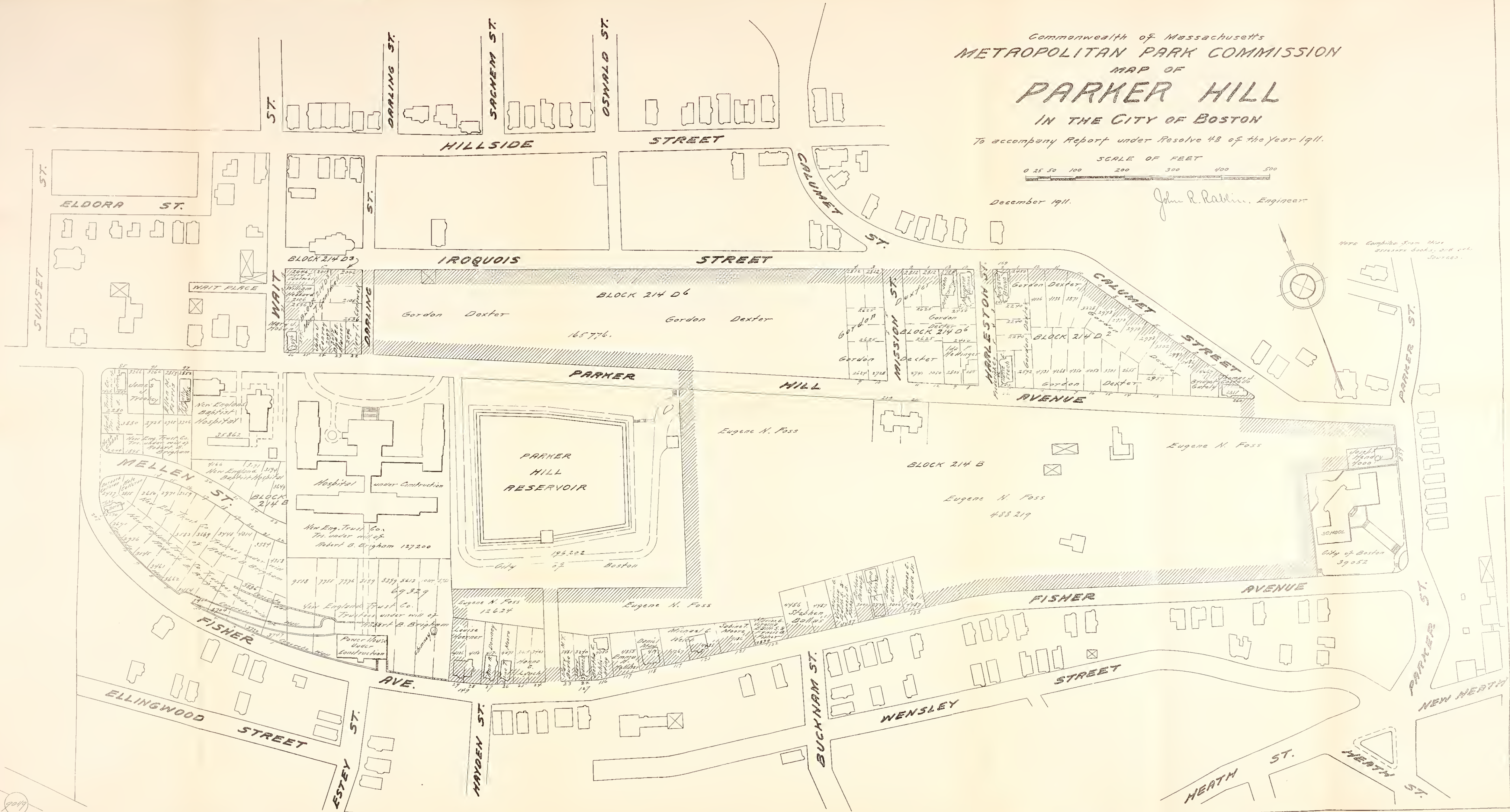
To accompany Report under Resolve 48 of the Year 1911.



December 1911.

John R. Rabin, Engineer

NOTE: Comparisons from these  
sources books, and other  
sources.







hospitals, and by the few private owners west of the hospital grounds, because it does not feel that in any event it would be advisable to acquire any of these, or to divert them from their present public use. The assessed value of the remaining real estate, within the limits prescribed by the resolve, including the estimates for the buildings not yet assessed, appears to be \$305,000. The area of the land thus estimated, omitting streets, is approximately 934,277 square feet, and the number of buildings is 23. To the total assessed value of the land to be acquired must be added, for purposes of settlement, a reasonable amount based upon the probable cost of purchase and settlement of claims which would arise out of any takings to be made. No estimate of the cost of development of the lands if acquired is included, because such development might very well be postponed for a considerable time, and because it does not seem feasible to the Board to prepare at this time any plans for development.

The resolve requires the commission to report its conclusions as to the advisability of acquiring the top of Parker Hill as a part of the metropolitan park system, and careful consideration has, therefore, been given to the location, cost, probability of usefulness, and other elements which appear to have any bearing upon this phase of the matter.

The metropolitan park system was begun and all its acquirements and construction since made a part of the system have been entered upon in accordance with certain principles laid down in the report to the Legislature of 1893 by the preliminary or investigating commission, appointed under chapter 342 of the Acts of 1892. Adherence to these principles has resulted in securing as metropolitan reservations only such lands, and in constructing only such driveways and other works of development, as are of extraordinary attractiveness and usefulness to all parts of the metropolitan parks district, and for the most part located in more than one city or town, and so beyond the power of any one city or town to acquire by its own action. A few exceptions to this course have been chiefly those required by the Legislature or made in cases where assistance has been given to a city or town which was seeking to avail itself of a gift, either of money or of some

park feature worth preserving, but beyond its sole means to acquire even with the assistance of the gift. When Boston desired to extend its park system towards Stony Brook and the Blue Hills, this Board in 1894 took and paid for a part of the land now known as West Roxbury Parkway, from Weld Street to Bellevue Hill, and transferred what it thus acquired to the city, so that the Boston parks and Bellevue Hill might be connected and the system extended to Washington Street in West Roxbury and the Stony Brook Reservation. By this taking and the subsequent taking of land between Stony Brook and Blue Hills reservations, a parkway connection has been assured from the center of the city to the Great Blue Hill. When Wakefield had the chance of securing by gift a part of Hart's Hill, this Board took and paid for the rest of the hill, and transferred its takings to the town for care and control.

The policy thus outlined has been found a wise one, which conserved the resources of the metropolitan district and avoided large expenditures merely to secure local benefits or satisfy local desires. If this policy is to be followed, and it seems to this Board to be a wise one to follow, the acquirement of Parker Hill as a metropolitan reservation does not seem advisable. It has never been looked upon as one of the most notable hills, nor as one which was resorted to by the people of the metropolitan district generally. It is not as high as many other hills already secured and equally available to the metropolitan district. One cannot imagine the citizens of the southern half of the district turning from Great Blue Hill, 635 feet high, or Bellevue Hill, 320 feet high, with their pleasing outlook over woodland and lower hills and country, to come to Parker Hill, which is little over 200 feet high, with an outlook marred for a long distance by surrounding housetops and factory chimneys. No more is it likely that the citizens of Waltham and near-by towns would leave Prospect Hill, 400 feet high, or that those of the northern district would leave Pine Hill, 250 feet high, or Béar Hill, 316 feet high, or Ram's Head Hill, 240 feet high, in and near Middlesex Fells, or Mount Hood in Melrose, or Dungeon Rock in Lynn, or the hills of the Lynn Woods, for the view from



Parker Hill. These hills and some others are either in public ownership already or open to public use, and in many cases provided with observation towers. Most of them are immediately accessible from electric cars, and when reached are either higher or more sightly than Parker Hill, or have more beautiful natural surroundings.

In its present condition Parker Hill is remarkable chiefly because it is an open space available to a large population of a densely populated portion of the city. Although close by the Fenway of the Boston park system, it is so unlike that beautiful lowland park that, adequately developed with trees and shrubs, and with broad open shelters and an observation tower, and popularized by occasional band concerts in summer, it would be of great local interest and comfort, and might even draw occasional visitors from other parts of the metropolitan district. Parker Hill, therefore, presents an opportunity for local rather than metropolitan effort.

All of which is respectfully submitted.

WILLIAM B. DE LAS CASAS.

EDWIN U. CURTIS.

DAVID N. SKILLINGS.

ELLERTON P. WHITNEY.

EVERETT C. BENTON.

DECEMBER, 1911.

## APPENDIX 2.

SPECIAL REPORT ON THE COST OF ACQUIRING LAND AND CONSTRUCTING A BOULEVARD AROUND LAKE QUANNAPOWITT, IN THE TOWN OF WAKEFIELD, REQUIRED BY CHAPTER 120 OF THE RESOLVES OF 1911.

The Metropolitan Park Commission presents herewith a special report in regard to the cost of taking or otherwise acquiring land for park purposes bordering upon Lake Quannapowitt in the town of Wakefield, and of constructing a boulevard around said lake, as required by chapter 120 of the Resolves of the Legislature for the year 1911. The resolve which requires this report is as follows:—

RESOLVES OF 1911, CHAPTER 120.

RESOLVE DIRECTING THE METROPOLITAN PARK COMMISSION TO INVESTIGATE THE COST OF ACQUIRING LAND AND CONSTRUCTING A BOULEVARD AROUND LAKE QUANNAPOWITT IN THE TOWN OF WAKEFIELD.

*Resolved*, That the metropolitan park commission shall ascertain the cost of taking, or otherwise acquiring land for park purposes bordering upon Lake Quannapowitt in the town of Wakefield, and of constructing a boulevard around said lake, and report to the next general court during the first week in January. [*Approved July 12, 1911.*]

In the year 1910 this Board made personal examination of the locality referred to in the above resolve upon request of a committee of the town of Wakefield, and prepared a general plan and made suggestions, embodied in a letter to the town, regarding the desirability of securing public control of the shores of Lake Quannapowitt, of which a considerable part had already been acquired by the town of Wakefield itself. This letter stated fully the general facts in regard to the lake and the reasons for the inability of the Board to take action in regard to the matter. It was as follows:—

Nov. 2, 1910.

Mr. F. J. HENKLE, *Chairman Wakefield Metropolitan Park Committee, Wakefield, Mass.*

DEAR SIR: — The Metropolitan Park Commission has given careful consideration to your request, on behalf of the town of Wakefield, for suggestions and co-operation in the matter of securing lands and providing for a driveway, in addition to those already secured and existing, about Lake Quannapowitt. Conferences have been held with your committee at this office and at Wakefield, and the entire shores of the lake have been inspected under your guidance. The engineer of the Board has also assisted in preparing a plan of the lands surrounding the lake, and in making certain suggestions and estimates in relation thereto.

The purpose of these conferences and investigations has been that of assisting your committee to secure information to present to your town in regard to the desirability of extending the protection of the purity of the lake and of the beauty and usefulness of its shores as a park, and of enlarging the convenience of bordering highways by a connection across the northerly end, and of devising a feasible method of securing the results which might be found desirable after such investigation.

Lake Quannapowitt, with 264 acres of water surface, is within a few acres of being the largest of the great ponds of the district, that is, of the ponds which are owned by the Commonwealth. About one-half of its shores have been acquired by the town of Wakefield and are bordered by existing highways. The remaining shores, although in private ownership, are occupied chiefly by ice houses, boat houses, cemeteries, and a few private dwellings, and are consequently very open. Wakefield is 10 miles from the State House. Its principal railroad station is within a half mile of the lake; the highway along the easterly border is the old turnpike from Boston through Charlestown, Everett, Malden, Melrose and Wakefield to Reading, connecting by cross roads with all the cities and towns of the northerly half of the Metropolitan Parks District. An electric car line from Boston to Reading runs through this highway and connects with other lines from practically all of the cities and towns of the northerly half of the district. Another highway to Reading runs within a short distance of the westerly shore of the lake, and there is a connecting road a short distance south of the lake. On the northerly side, however, connection is made between the highways only by a very roundabout course through Reading. The acquirement of the shores of the lake by the town made one of the most notable examples of park work prior to the establishment of the Metropolitan Parks, and was so referred to in the report of the Preliminary or Investigating Metropolitan Park Commission to the Legislature of 1893.

Consideration of the beauty, size, availability, and relation to surrounding residential sections of the town leaves no doubt in the minds of this Board that it is most desirable that the shores of Lake Quannapowitt now remaining in private ownership be acquired and placed under restriction to prevent uses which may injure the purity of its waters, or detract from the natural beauty or acquirements already made by the town. It seems unwise, however, to suggest exact limits for such acquirements and developments except by the general statement that it will be true economy to acquire at once a rather wide stretch of the low lands which are subject to overflow and polluting deposits, and to provide a bordering roadway and intercepting drainage channel, and to make other acquirements such as will be a benefit to the boat houses, picnic grounds, ice houses and cemeteries which form a large part of the remaining private ownership, and to avoid interference with the practical operation of these business concerns. Lines which have been placed upon the plans of surrounding lands must therefore be taken merely as suggestive, and likely to be modified by circumstances and by the judgment of the town in regard to the matter.

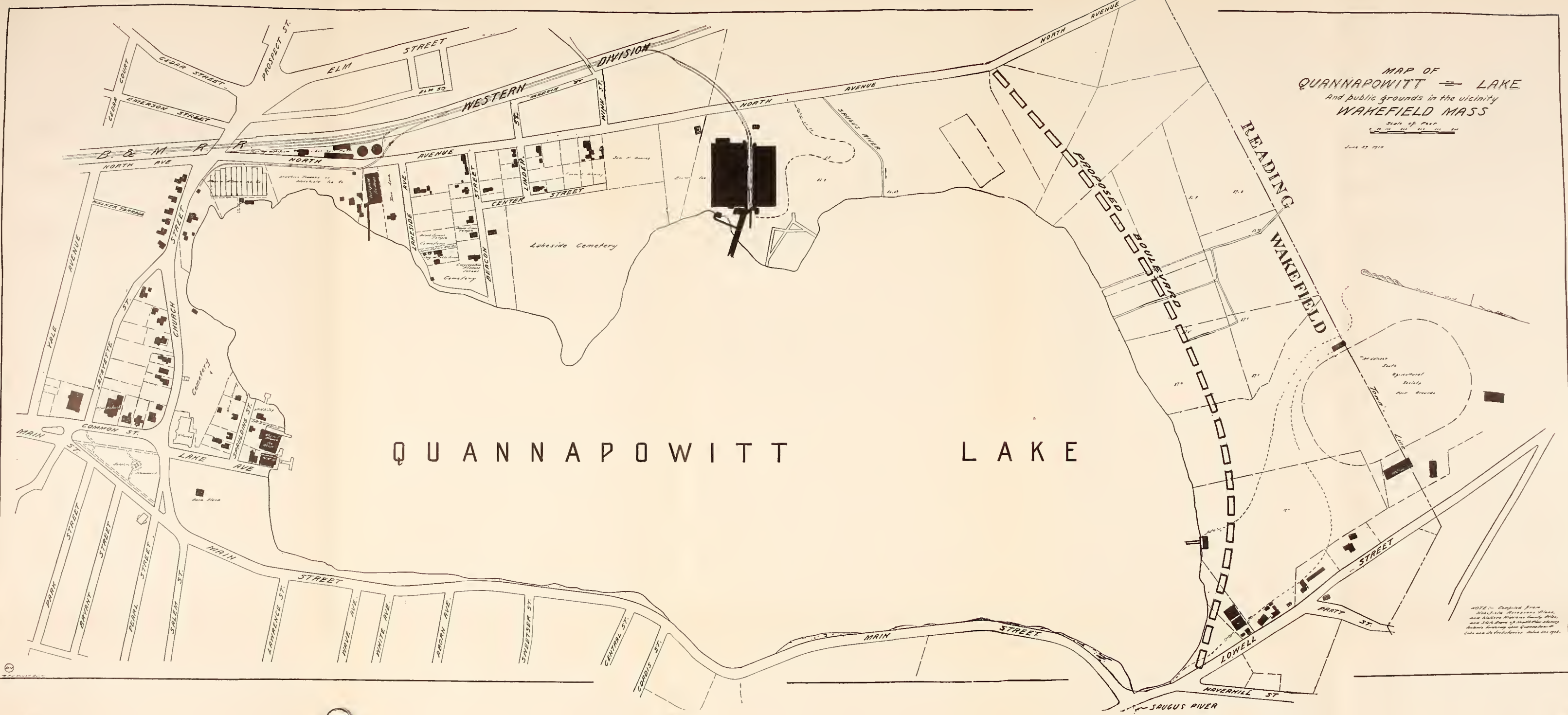
The practical question confronting your committee we apprehend to be the one of finance, and the extent, if any, to which this board can assist in the acquirements as to which it expresses approval. To this we must return answer that the Board has no funds which it can devote to the assistance of this project for the very simple and ample reason that it has no funds whatever for any project, and that the balance of the loan appropriations which appear as unexpended are held merely for payment of the land claims yet unsettled, and completion of work already begun. Furthermore, the Board is of the opinion that it is precluded, by the course which it has pursued since the last loan appropriations were made in 1903, from recommending to the Legislature additional loan appropriations for extending the Metropolitan Park System. The Board deemed it proper to adopt and adhere to this course because of the size of the park appropriations thus far made, and of the circumstances under which the last loan appropriations were made, and of the many expressions by the various cities and towns of the Metropolitan District that the taxation for sinking fund and interest requirement of the loans already authorized constitutes an excessive burden.

It is perhaps fair to add that since the last loan appropriations were made in 1903 the Board has confined itself almost entirely to completing the work in the three classes of reservations which had then been acquired, namely, the woodland, river-bank, and seashore reservations, and the parkways connecting and making these reservations available; and whatever omissions in the completeness of this work are still apparent, are due to limitation imposed by the size of the



MAP OF  
QUANNAPOWITT LAKE  
And public grounds in the vicinity  
WAKEFIELD MASS

Scale of Feet  
0 20 40 60 80 100 120  
June 27 1910



QUANNAPOWITT LAKE

NOTE: Compiled from  
Saugus River and Lake  
and Wakefield County Atlas,  
and State House of Representatives  
Reports, containing plan of Quannapowitt  
Lake and its tributaries. Taken Dec 1908.





appropriations. While entirely approving the idea of securing the shores of the great ponds of the district, the Board has felt obliged to consider them a separate class of park work not yet approved or entered upon by the district.

Very truly yours,  
(Signed) W. B. DE LAS CASAS,  
*Chairman.*

Since the passage of the resolve, chapter 120 of 1911, the Board has made further investigation in regard to the cost of taking or acquiring the shores and constructing a boulevard around the lake with the view to determining the limits of acquirement and construction for which estimates were required by the resolve, and as a result has reached the conclusion that as the existing highways near and along the lake almost encircle the lake, if they were connected by a driveway across the low lands on the northerly side of the lake, a connecting driveway would be provided completely encircling the lake, and this would be all that was contemplated by the resolve, or which seems to be advisable at the present time. Surveys have been made and a plan for such a driveway or boulevard has accordingly been prepared, together with estimates of the cost of the necessary land and of the construction of the driveway or boulevard, and these are submitted herewith. The land for this driveway, together with that between the driveway and the lake, is mostly unoccupied low land, although at the easterly end where the main street from Wakefield divides into highways leading to the cities and towns to the north, there is an ice house and a picnic grove, with boat house and boat landing, which present some uncertain elements of value. The plan and the estimates submitted assume that in case of the ice house a covered channel might be provided for passing ice under the roadway from the lake to the runway to the ice house, and that in the case of the picnic grove arrangement might be made by which a right to retain a boat house and landing on the lake should be retained in connection with the grove. The grove is small but very attractive, and would form a desirable addition to the lands to be acquired, but has not been thought to be so necessary to the roadway that its value ought to be included

in the estimates here submitted. The assessed value of the lands required for the driveway or boulevard indicated in a broken line upon the general plan, and more in detail upon the larger plan, which accompany this report, together with the land between the driveway and the lake, appears to be \$2,885, although it is impossible to be sure that all of the lands have ever been assessed. The estimates do not include any for the land already belonging to the town of Wakefield, which it is assumed would be available without cost for the purpose of the driveway. To these estimates of the cost of the land a reasonable addition should be made to provide for their possible cost above that of the assessed valuation. The cost of construction estimated as that of the roadway indicated upon the detailed plan, which indicates a roadway 30 feet in width, with the sidewalk and planting space upon one side of a combined width of 11 feet, is estimated as approximately \$70,000. In explanation of what seems a large cost for construction it may be added that owing to the swampy nature of the soil a very large amount of filling material and a considerable amount of drainage is likely to be required, and these two items, with the cost of a concrete arch to provide for the passing of ice to the ice house, would cost approximately four-fifths of the entire cost of the driveway or boulevard.

All of which is respectfully submitted.

WILLIAM B. DE LAS CASAS.

EDWIN U. CURTIS.

DAVID N. SKILLINGS.

ELLERTON P. WHITNEY.

EVERETT C. BENTON.

DECEMBER, 1911.

## APPENDIX 3.

SPECIAL REPORT UPON THE ADVISABILITY AND COST OF A PARKWAY CONNECTION BETWEEN WINTHROP PARKWAY IN THE TOWN OF REVERE AND WINTHROP SHORE RESERVATION IN THE TOWN OF WINTHROP, REQUIRED BY CHAPTER 135 OF THE RESOLVES OF 1911.

The Metropolitan Park Commission presents herewith a special report in regard to the advisability and cost of a parkway connection between Winthrop Parkway in the town of Revere and Winthrop Shore Reservation in the town of Winthrop, as required by chapter 135 of the Resolves of the Legislature of the year 1911. The resolve, chapter 135 of 1911, under which this report is made, is as follows:—

## RESOLVES OF 1911, CHAPTER 135.

RESOLVE TO DIRECT THE METROPOLITAN PARK COMMISSION TO INVESTIGATE AND REPORT UPON THE ADVISABILITY AND COST OF A PARKWAY CONNECTION BETWEEN WINTHROP PARKWAY IN THE TOWN OF REVERE AND WINTHROP SHORE RESERVATION IN THE TOWN OF WINTHROP.

*Resolved*, That the metropolitan park commission is hereby directed to investigate the advisability and the cost of acquiring land to form a connection between Winthrop parkway in the town of Revere and Winthrop shore reservation in the town of Winthrop, and of constructing thereon a parkway or driveway, and of protecting the shore between these points. The commission shall report in print to the next general court not later than the first Monday in January. For the purpose of carrying out this resolve, said commission may expend out of the Metropolitan Parks Maintenance Fund a sum not exceeding two hundred and fifty dollars. [*Approved July 19, 1911.*]

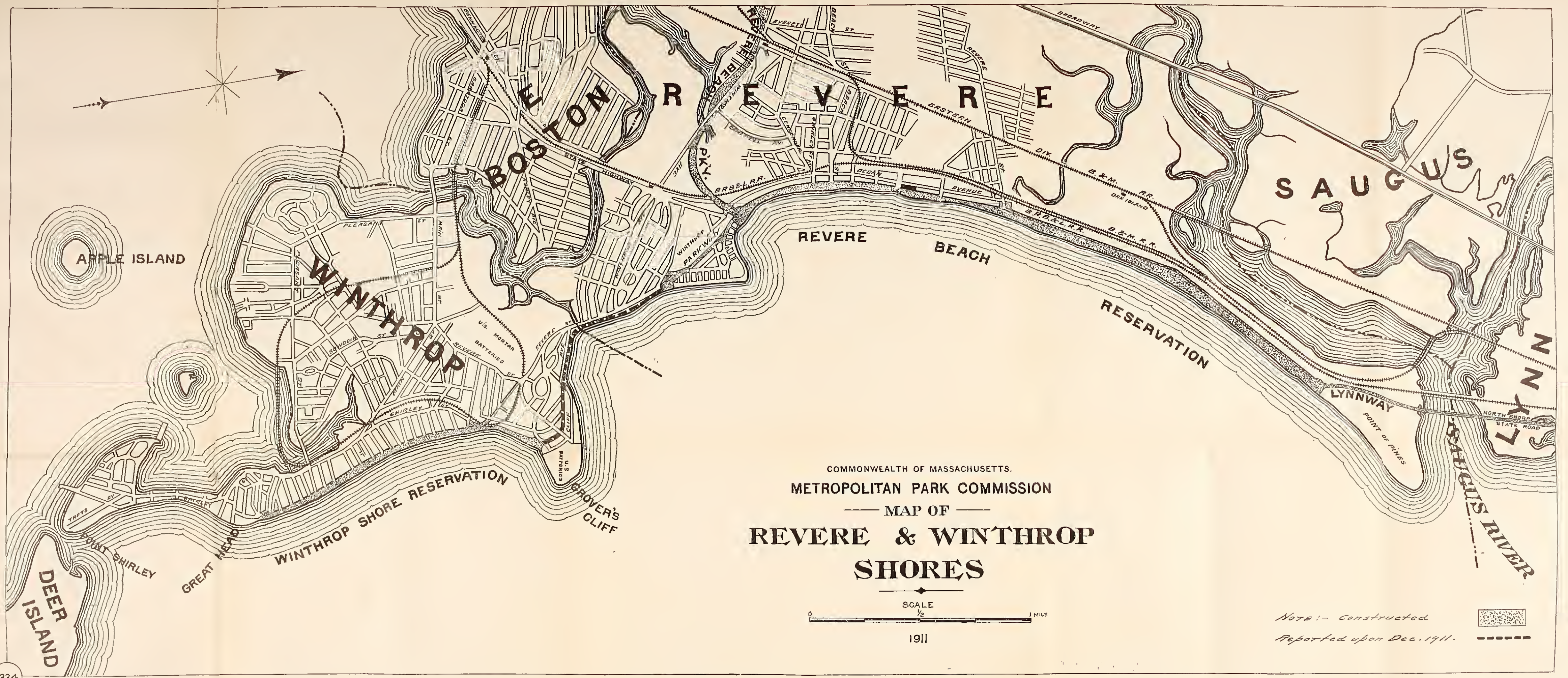
The commission has given careful consideration to the subject-matter of this resolve, and begs leave to report as follows:—

A connection between Revere Beach and Winthrop Shore Reservations such as indicated by the language of the resolve has been long considered and approved of in a general way by this Board, and has been approved of by the Legislature in the general appropriations of 1903, which contemplated consideration of such a connection among many other matters. A portion of the connection has already been provided in the form of Winthrop Parkway from the southerly circle of Revere Beach Reservation to the shore at the foot of Beachmont Hill. The extension of this parkway to Winthrop Shore Reservation would be a logical extension of the Metropolitan Park System and completion of a part of the system, which, during the summer months at least, is the most extensively used of any portion of the entire system. The reasons which have operated in the past to prevent its completion have been its very considerable cost and a difficulty in securing options for the necessary lands at prices based upon assessed values and a reasonable recognition of the benefits which would result rather than upon possibilities of law suits. Whether or not better prices may be obtained at the present time is uncertain, and expert opinions in regard to the probable cost of lands were not provided for by the small expenditure authorized by the resolve. The assessed values of the land are, therefore, given as the basis upon which an allowance for the possibility of a settlement of claims may be estimated.

A general map of Revere and Winthrop shores indicating the portions of the system already provided for, and the portions to which this report relates, and also a detailed map indicating the portion of a connection for which present provision seems advisable, accompany this report.

The former map indicates very plainly the juxtaposition and relation of the completed portion and the proposed extension. It shows at a glance that a large portion of the shore front between Saugus River and Great Head in Winthrop is already a portion of the Metropolitan Park System and is developed by an ample roadway following the shore. The driveway along the portion known as Revere Beach connects at Saugus River with the state highway leading to Lynn and





COMMONWEALTH OF MASSACHUSETTS.  
METROPOLITAN PARK COMMISSION  
— MAP OF —  
**REVERE & WINTHROP  
SHORES**

SCALE  
0 1/2 1 MILE

1911

NOTE:— Constructed  
Reported upon Dec. 1911.





the country beyond, and at the southerly circle with Revere Beach Parkway leading westerly toward Boston and the larger part of the Metropolitan District, and with Winthrop Parkway already built in a practically straight line to the seashore at the foot of Beachmont Hill and to connection with the only town way which appears on the map as leading to Winthrop and the beautiful Winthrop Shore Reservation. From the map it is evident that a parkway connection between the portion of Winthrop Parkway now completed and Winthrop Shore Reservation is essential to the completeness of this portion of the Metropolitan Park System, and is desirable as a matter of public convenience, unless the existing town way referred to is so ample for present and future necessities that on the score of economy the comfort and attractiveness of a parkway connection may be dispensed with.

Unfortunately, the present highway connection, when viewed on the ground, is not only insufficient for even highway necessities, but is so close to the shore that one portion near the end of Winthrop Parkway has been washed away and the highway closed for over a year, and the grades over Beachmont Hill are steep and broken, and at the portion along Short Beach near Winthrop Highlands the shingle crest of the beach has encroached upon the highway to an extent which has driven travel to one side and probably onto private land. Upon the ground it is also apparent that the shore front in this part of Revere and in Winthrop, except where the Winthrop Shore Reservation has been constructed, is so exposed to the sea and is of such soft soil that at the points where it is unprotected the highlands have been washed away for generations at a rate, measured at such points as Great Head at Winthrop, of approximately one foot a year. A railroad built upon the shore of Great Head was washed away many years ago and other portions of the shore front have been saved only by the building of sea walls. Winthrop Shore Reservation was acquired and the sea wall built upon its front after a great storm, chiefly from the immediate necessity of thus preventing a considerable portion of the town of Winthrop from being made uninhab-

itable through fear of being washed away by the sea. Since then the United States government has built a wall to protect its forts at Grover's Cliff, and this Board has been provided with money and has built a rip-rap and low temporary wall to protect the portion of the Reservation along the southerly front of Winthrop Highlands and the property behind it. The highway at Short Beach is protected only by the shingle crest of the beach, and in a storm within recent years the houses upon the beach were washed away, and the northerly shore of Winthrop Highlands so cut into that the sewer pipes in Sewall Avenue are in danger of being destroyed, and, as has already been stated, the portion of the highway near the end of Winthrop Highway is now washed away and closed to travel.

With these facts in mind the commission has made its investigations, and has reached certain conclusions which must be stated in order to give a complete understanding of the plan which it deems best and according to which its estimate of the cost of land and the construction of a parkway connection between Winthrop Parkway and Winthrop Shore Reservation has been made. The conclusions reached are as follows: —

Obviously, the duty of this Board is to report in regard to providing a parkway connection between the points named.

It does not seem wise to attempt to occupy or improve for this purpose the only highway connection between the two points unless such highway is ample and suitable for both highway and parkway uses or its use and improvement, even temporarily, a real economy to the district.

The existing highway and the entire shore front is so exposed that it seems necessary, even if no parkway is built, to protect a considerable portion of the shore front by a sea wall.

Based upon these conclusions a careful preliminary plan has been prepared for the extension of Winthrop Parkway along the shore front to the base of the upland of Winthrop Highlands just beyond Short Beach independent of the existing highway and in an alignment which will permit its extension along the northerly shore of Winthrop Highlands

and a short connection with the lands on the shore front on the south side of Winthrop Highlands unprotected and in permanent form which will extend to the completed portion of Winthrop Shore Reservation. Such an extension would give a practically level parkway bordering the ocean, protected by sea wall which would at the same time protect the town way and the already privately occupied property of Beachmont Hill in the town of Revere, and permit a future extension which would afford similar protection in connection with the United States government walls already built about Grover's Cliff to the whole of Winthrop Highlands. Estimates are presented only for the portion as far as the end of Short Beach because beyond this point determination of the route, except upon the general principles above stated, does not seem so feasible at this time, nor so immediately necessary, as to warrant the preparation of detailed plans and estimates.

The necessary land and construction of the portion estimated upon, that is from Winthrop Parkway to the southerly end of Short Beach, will cost more to-day than it would have cost when it was first urged upon the district, but it will now cost less than it is likely to cost in the near future. Moreover, the wretched condition and uselessness of the town way between these points, and the expense out of proportion to the public benefit necessary for properly rebuilding the highway, unless protected by public ownership and a sea wall, and the ever present danger of destruction of property and life along the shore, together with a recognition of the beauty and public convenience which may be insured by the acquirement of the shore front and construction of the protecting wall and filling, all present themselves as arguments in favor of the matter and favorable action.

The land required by the plan which accompanies this report and is deemed best by the Board, appears to be assessed for a little less than \$100,000. Some of it is at the foot of an embankment and below the present line of high water, and it is hoped would be contributed in return for the protection assured by the construction of a sea wall. Much of it, however, is occupied by small houses on posts, and a



very little by houses of greater value placed upon permanent foundations. An appropriation for the acquirement of this land should include a reasonable increase corresponding to what experience shows is generally necessary to insure prompt and economical settlement of claims for property taken. Construction of a sea wall and retaining walls where the embankment is cut into and filling back of the sea wall as far as it seems immediately necessary to construct it, with adequate drainage for protection of the filling, is estimated to cost approximately \$130,000.

Construction of a roadway, that is, surfacing of the roadway over this filling to a point opposite Winthrop Avenue at the beginning of Short Beach, would cost approximately \$15,000. From this point to the southerly end of Short Beach construction of a parkway upon the beach would require a wall and considerable filling, and would still leave the existing town way back of it at a lower grade than the crest of the beach. Approximately one-half this distance is in the town of Revere and one-half in the town of Winthrop. If this town highway should be raised and rebuilt at a cost for construction of approximately \$25,000, protection would be given to the weak beach formed by the shingle crest, and the dam between the sea and inland property would be strengthened, and for many years the highway alone thus reconstructed would prove adequate at this point, and of suitable grade and attractiveness for both highway and parkway uses. From the end of Short Beach an excellent though narrow town way leads directly to Winthrop Shore Reservation.

A bill to provide for the acquirement of land and construction for which these estimates are given accompanies this report.

All of which is respectfully submitted.

WILLIAM B. DE LAS CASAS.

EDWIN U. CURTIS.

DAVID N. SKILLINGS.

ELLERTON P. WHITNEY.

EVERETT C. BENTON.

AN ACT TO AUTHORIZE THE METROPOLITAN PARK COMMISSION TO ACQUIRE LAND FOR, AND TO CONSTRUCT AN EXTENSION OF, WINTHROP PARKWAY FROM THE SOUTHERLY TERMINUS OF SAID PARKWAY IN REVERE TO WINTHROP SHORE RESERVATION IN THE TOWN OF WINTHROP.

*Be it enacted, etc., as follows:*

SECTION 1. The metropolitan park commission is hereby authorized to acquire land for, and to construct an extension of, Winthrop Parkway from the southerly terminus of said parkway in Revere to the Winthrop Shore Reservation under the control of said commission in Winthrop. For this purpose, said metropolitan park commission may exercise all the powers conferred upon it by chapter two hundred and eighty-eight of the acts of the year eighteen hundred and ninety-four and acts in amendment thereof.

SECTION 2. To meet any expenditures under the authority of this act the treasurer and receiver-general shall issue scrip or certificates of indebtedness or bonds, as an addition to the Metropolitan Parks Loan, Series Two, to an amount not exceeding three hundred thousand dollars. The sinking fund already established by law shall also be maintained for the purpose of extinguishing scrip, certificates or bonds issued under the authority of this act. Any premium realized on the sale of such scrip, certificates or bonds shall be applied to the payment of the interest on the loan hereby authorized, as it accrues. Said scrip, certificates or bonds, shall be issued, and said sinking fund assessed and collected, in accordance with the provisions of chapter four hundred and nineteen of the acts of the year eighteen hundred and ninety-nine and acts in amendment thereof.

SECTION 3. This act shall take effect upon its passage.

## APPENDIX 4.

SPECIAL REPORT OF THE METROPOLITAN PARK COMMISSION  
UPON THE RESULTS OF ITS INVESTIGATIONS AS TO IM-  
PROVING THE SANITARY CONDITION OF CHARLES RIVER,  
REQUIRED BY CHAPTER 101 OF THE RESOLVES OF 1910  
AND CHAPTER 239 OF THE ACTS OF 1911.

The Metropolitan Park Commission submits herewith its final report in regard to the advisability of improving the sanitary condition of Charles River, as required by chapter 101 of the Resolves of 1910, and chapter 239 of the Acts of 1911.

The original resolve, chapter 101 of the Resolves of 1910, is given in the report of this Board to the Legislature of 1911, and that report, for convenience, is annexed as an appendix to this report. Chapter 239 of the Acts of 1911, authorizing an extension of the time within which final report upon the subject-matter of the resolve should be made, is as follows:—

## ACTS OF 1911, CHAPTER 239.

AN ACT TO EXTEND THE TIME WITHIN WHICH THE METROPOLITAN PARK COMMISSION MAY REPORT RELATIVE TO THE ADVISABILITY OF IMPROVING THE SANITARY CONDITION OF THE CHARLES RIVER RESERVATION.

*Be it enacted, etc., as follows:*

SECTION 1. The time within which the metropolitan park commission is required by chapter one hundred and one of the resolves of the year nineteen hundred and ten, to report upon the advisability of improving the sanitary condition of the Charles river reservation, is hereby extended to the second Saturday of January, nineteen hundred and twelve.

SECTION 2. This act shall take effect upon its passage. [*Approved April 5, 1911.*]

The report of this Board to the Legislature of 1911 stated in effect that conditions existing in Charles River between Moody Street and Concord Street bridges made the river at certain points and at certain parts of the year unsightly, inconvenient and unpleasant, and that these conditions probably made it dangerous

to the health of the community; that these conditions were largely due to shoaling at places, and to low water at certain seasons of the year, caused chiefly by the river being drawn down during dry times of the year; that remedy for these conditions was dredging and regulation of discharges into the river, and regulation of the extent to which rights to draw down the river should be exercised. And the Board asked for an appropriation to provide for dredging and authority to regulate the discharges into the river, and an extension of the time for final report in the hope that some basis of agreement might be reached with those having the right to withdraw the water whereby such withdrawal of water might be regulated.

At the hearings held by the Legislature upon this report and upon a bill for an appropriation for dredging, it was made apparent that the public desired and this Board considered it wise that regulation of discharges and of the withdrawal of water be authorized not only within the limits prescribed by the resolve, but also upon all the portion of Charles River from the lower dam in Watertown to Newton Upper Falls, — the limit of the holdings by this Board; and that dredging was necessary throughout this larger portion of the river, and that an appropriation applicable to dredging in all parts of the river was thought advisable. The Legislature, however, postponed all action on these suggestions and required this Board to continue its investigations and to make report to the Legislature of 1912.

This Board has, therefore, continued its investigations in the hope of arriving at some basis of agreement with the manufacturing companies owning rights of flowage or rights of withdrawing water from the river. In the course of conferences with the Boston Manufacturing Company, which has the largest rights of flowage and of withdrawing water for manufacturing purposes from the river, and in correspondence with the company, it was stated by representatives of the company that they rarely drew the river down to an objectionable point, but rather ceased to draw water except for making electric power and for washing as soon as objectionable conditions began to appear. They also stated that while they felt it was for their interest to thus voluntarily refrain from drawing down the river, they could not see their way to make an agreement to limit their rights to a level higher than that to which they now have the right to draw down the river. They further stated that one of the principal reasons for refusing to establish such a limit was found in the report of eminent engineers that the quantity of water which they could draw upon was al-



ready seriously limited by the exercise of rights granted to cities and towns to take water for water-supply purposes from or near the river without returning it again to the river.

In view of these circumstances the Board is obliged to conclude that there is no reason for delaying the dredging which in any event would be desirable, and it therefore renews the recommendation of its previous report and asks for an appropriation to be expended in dredging the river, and for authority to regulate polluting discharges into the river. It seems desirable, also, that there should be some legislation limiting the amount of water which may now be withdrawn from the river, and that future requests for rights to withdraw water from the river should be most carefully scrutinized by the Legislature, and if possible refused. They feel also that it is desirable that they be authorized to regulate the withdrawal of water by manufacturing companies, either by legislation which shall so limit the right to withdraw water, or that an appropriation be provided with authority to this Board to acquire the rights to withdrawal of water, and to make grants back of a limited right to withdraw water from the river; or, as this limitation would probably be almost as expensive as the cost of acquiring the rights, that authority and an appropriation be given to the Board under which they can acquire all rights of manufacturing companies to withdraw water from the river, with authority to lease the right to withdraw water to the extent only which is consistent with preserving proper sanitary conditions and the usefulness and attractive appearance of the river. The Board regrets that it cannot report estimates of the cost of thus limiting the rights to withdraw water or of acquiring the rights of the various companies to withdraw water, because it is not provided with funds for the purpose of securing competent expert opinion as to the value of these rights. If such funds are provided it will be possible to prepare such estimates, and possibly to secure an option from the manufacturing companies for the purchase of their rights.

All of which is respectfully submitted.

WILLIAM B. DE LAS CASAS.  
EDWIN U. CURTIS.  
DAVID N. SKILLINGS.  
ELLERTON P. WHITNEY.  
EVERETT C. BENTON.



## APPENDIX.

REPORT OF THE METROPOLITAN PARK COMMISSION UPON THE  
RESULTS OF ITS INVESTIGATION AS TO THE ADVISABILITY  
OF IMPROVING THE SANITARY CONDITION OF CHARLES  
RIVER, DIRECTED BY CHAPTER 101 OF THE RESOLVES OF  
1910.

The resolve, chapter 101 of the Resolves of 1910, under which this report is made, is as follows: —

RESOLVE TO PROVIDE FOR AN INVESTIGATION AND REPORT AS TO THE  
ADVISABILITY OF IMPROVING THE SANITARY CONDITION OF THE  
CHARLES RIVER RESERVATION.

*Resolved*, That the metropolitan park commission is hereby requested to investigate and report in print to the next general court, on or before the second Saturday of January, nineteen hundred and eleven, upon the subject-matter of the petitions of George Hutchinson, mayor of Newton, and Edward A. Walker, mayor of Waltham, with accompanying bill, House, Number three hundred and forty-three, with such recommendations as the board may deem proper.  
[*Approved May 26, 1910.*

The petitions of the mayor of Newton and of the mayor of Waltham were accompanied by House Bill, No. 343, of which the language, so far as necessary to explain the substance of the resolve directing this report, was as follows: —

SECTION 1. The metropolitan park commission is hereby authorized to do such dredging and other work in and about Charles river between Moody street in the city of Waltham and Concord street in the city of Newton and such filling and other work upon lands abutting upon or near said section of said river as said commission may deem necessary in order to restore said river to a sanitary and healthful condition. . . . and may also take by eminent domain, or acquire by agreement or otherwise, such rights or easements as said commission may deem necessary to enable it to do the dredging, filling and other work required by this act, . . .

While the investigation and report required by this resolve is limited to the portion of Charles River between Moody Street in Waltham and Concord Street in Newton, the Commission

has, as incident to that investigation, extended its investigation in some measure to the entire portion of Charles River between the dam near Galen Street in Watertown and the furthestmost point of its holdings at Newton Upper Falls. It has been further limited, however, by the length of time within which it might prosecute its investigations, and by the fact that no appropriation accompanied the resolve directing the investigation.

As a means of beginning its investigation, the Commission addressed inquiry to the State Board of Health and to the authorities of the cities of Waltham and Newton and the towns of Watertown, Wellesley and Weston, asking for such opinions and information in regard to the subject-matter of the resolve as they might have in their possession, but received no definite data other than opinions based upon unrecorded observations and existing conditions.

Later in the year the river was inspected by the Board, in company with representatives of various branches of government in most of the above cities and towns, and still later a conference of these representatives was invited and held at the office of the Board in Boston. Conference has also been held with the treasurer of the Boston Manufacturing Company, which owns the largest portion of the flowage rights in the river above Moody Street. Preliminary surveys have also been made, with a view to determining the changes that may be accompanied by dredging and filling in compensating quantities, together with estimates thereof; and careful consideration has been given to the report in regard to the improvement of Charles River from the line between Watertown and Waltham to Mother Brook, made jointly with the State Board of Health in May, 1896, under chapter 529 of the Acts of 1894, and the data therein and other data subsequently collected in connection with unsuccessful efforts made at that time to reach an agreement with the Boston Manufacturing Company for fixing a higher level below which its flash boards might be removed.

From these investigations and conferences, and with the limited data which it has thus far been able to gather, the Board has reached only preliminary conclusions, and its report must therefore be only in the nature of a partial report.

These preliminary conclusions are as follows:—

Whether viewed as to the effect of the sanitary condition of the river and the health of the public in cities and towns along the river, or as to the convenience and health of those who use the river for recreation, it appears that the changes of water

level which take place each year in Charles River are unsatisfactory and seemingly dangerous. The only facts which need to be stated to warrant this conclusion are the apparent ones of the alternate flooding and exposing of mud flats; the gradual increase in size of these areas, as vegetation forms upon them; the obstruction of the channel, to the extent of leaving only small ponds in some portions of the river during the dry season of each year; the increase of mosquitoes, which annoy and probably disseminate disease; and the odors, which, whether injurious to health or not, are very obnoxious. In all these respects the condition of the river appears to have grown worse in the past few years.

These bad conditions extend over the entire portion of the river between the lower dam and Watertown and Newton Upper Falls, and are aggravated by more or less impure or unsightly discharges from mills and drains and street-wash outlets into the river.

Dredging and filling will improve the conditions, but will not wholly remedy them unless extended along the entire river according to a plan prepared to provide for deep channels with banks free from mud and vegetation, together with some regulation against artificial lowering of the water level at certain seasons of the year, and against befouling the river by noxious discharges into it.

Present conditions may be improved, however, by a limited amount of dredging and filling. The authorities of the cities and towns along the river are in favor of beginning this improvement by immediate work to remove the most objectionable flats, and to deepen and open channels which will drain the stagnant pools left in the river bed when, during dry seasons of the year, the river is so low that water does not come over the dams; they are also in favor of immediate authority being given to regulate discharges into the river; and of an annual appropriation as part of the maintenance appropriations for the next few years; and of extending the time of final report by this Board upon the whole matter, so as to enable it to make further investigations and surveys, with a view to reaching some agreement by which artificial withdrawal and cutting off of the water for mill and water-supply purposes may be regulated. The representative of the Boston Manufacturing Company has expressed a readiness to endeavor to reach agreement in regard to these matters, so far as they concern that property.

The Board approves of the method of procedure outlined above as being in accordance with the wishes of the local authorities of the cities and towns along the river, and accordingly recommends action for that purpose; and has suggested, as required by law, a special item for its maintenance appropriations for the year 1911 of \$25,000 with which to begin work.

All of which is respectfully submitted.

WILLIAM B. DE LAS CASAS.

EDWIN U. CURTIS.

DAVID N. SKILLINGS.

ELLERTON P. WHITNEY.

EVERETT C. BENTON.

JAN. 4, 1911.













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